LS² Life Sciences Switzerland

GBM

ÖGMBT

Universität Zürich[UZH]

13-14 February 2020

University of Zurich, Campus Irchel

FEBS3+

LS² Annual Meeting 2020

Cells, Molecules & Organisms

Meeting Booklet

This booklet belongs to:

If lost, please return to:

Life Sciences Switzerland LS^2
Design by Dagmar Bocakova
Zurich 2020

WELCOME ADDRESS

Dear colleagues,

We are delighted to **welcome you to the FEBS3+ LS^2 Annual Meeting 2020** at the Irchel Campus of the University of Zurich.

The Life Sciences Switzerland (LS^2) Annual Meeting brings together scientists from different countries and scientific backgrounds to explore diverse topics under the umbrella of the life sciences. For the first time this year, the LS^2 Annual meeting is being held as a joint **FEBS3+ meeting together with the German Society for Biochemistry and Molecular Biology (GBM) & Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)**.

The theme of this year's meeting is **"Cells, Molecules and Organisms"** with plenary talks from the earliest stages of development to tissue repair and cellular plasticity. Discover the latest, most exciting findings in the field, from **Molecular and Cellular Biosciences, Proteomics, Physiology, Pharmacology, Biophysics, Microbiology, Neuroscience, Bioinformatics, Microscopy and more**, presented by around **30 invited speakers** and over **50 speakers selected from abstracts** in eleven scientific symposia and five plenary lectures.

To promote young scientists, the **popular "PIs of Tomorrow" session**, in which selected postdocs will present their research to a jury of professors, will again be held as a plenary session. This year, **flash talks** of selected posters will also be presented **in the plenary sessions as well as in symposia**. Join us for the poster session with **over 130 posters and a new poster quiz**, combined with a **large industry exhibition and Apéro.** For the 2020 edition**, five poster prizes** will be awarded!

For the first time this year, we will also hold a **Young Scientists' Satellite Meeting the day before the Annual Meeting**, with a **keynote lecture and scientific symposia of selected short talks**, followed by a **career symposium and Meet and Greet Apéro** with the LS^2 delegates and Annual Meeting speakers. **A Public Science Policy Panel on "Vaccination in Disease Prevention"** will cap the day. Invited international experts will introduce this timely topic with short lectures on different aspects of vaccination, followed by an open discussion with the public.

As every year, we are also very much looking forward to the laureate talks of the winners of the **Friedrich-Miescher-Award and the Lelio Orci Award.**

We are **extremely grateful to all of our sponsors and exhibitors of the 2020 edition (see page 6-7),** who contributed to make this big event possible. **Please visit their booths** to learn about the latest tools and products, with a chance to win prizes in the Exhibition lottery.

We look forward to an exciting and stimulating scientific meeting, which provides the opportunity to expand your network of colleagues and friends and foster new collaborations, and wish you all an enjoyable and successful time.

Sincerely

Fiona Doetsch
Biozentrum, University of Basel
Chair of the FEBS3+ LS² Annual Meeting 2020

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ACCREDITATION FOR CONTINUOUS EDUCATION

A request has been submitted to accredit the entire LS^2 Annual Meeting 2020 for **days of continuous education in the field of animal experimentation**. Participants will be informed about the outcome by e-mail after the meeting.

CONFERENCE WIFI ACCESS

Access **http://t.uzh.ch/coa**
& enter the Event-ID: 20ls23245

NURSING & PARENTING ROOM

If you require a calm room to nurse your child, please inquire at the registration desk for the key and directions.

THANK YOU

TO OUR SPONSORS AND EXHIBITORS

Special thanks goes to **FEBS** for their generous FEBS3+ conference support.

ORGANIZING COMMITTEE 2020

LS² ANNUAL MEETING CHAIR

Fiona Doetsch / Biozentrum, University of Basel

SCIENTIFIC COMMITTEE

Richard Benton / University of Lausanne
Marie-Noëlle Giraud / University of Fribourg
Susan Mango / Biozentrum, University of Basel
Howard Riezman / University of Geneva
Sophie Martin / University of Lausanne
Lukas Sommer / University of Zurich
Marko Kaksonen / University of Geneva
Volker Thiel / University of Bern

FEBS3+ CO-ORGANIZING SOCIETIES

German Society for Biochemistry and Molecular Biology (GBM)
Blanche Schwappach / University Medical Center Göttingen, DE & GBM Chair
Anke Lischeid / GBM Managing Director

Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)
Lukas A. Huber / Innsbruck Medical University, AT & ÖGMBT Chair
Alexandra Khassidov / ÖGMBT Managing Director

LS² MANAGEMENT OFFICE

Urs Greber / University of Zurich, President of LS²
Didier Picard / University of Geneva, President-elect of LS²
Jean Gruenberg / University of Geneva, Former president of LS²
Carolin von Schoultz / University of Zurich, Scientific Officer LS²
Elena Cardenal-Muñoz / University of Geneva, Scientific Officer LS²
Jacqueline Oberholzer / University of Zurich, Executive Secretary LS²

LS² FREELANCE SUPPORT:

Dagmar Bocakova / Design
Dominique Ritter / Administration & accounting support
Michael Vögeli / IT infrastructure
Ayala Sela / Social Media

LS² SECTIONS

Molecular and Cellular Biosciences (MCB) / Physiology / Proteomics / Autophagy / Systems Biology / Biophysics / Intersection Cardiovascular Biology / Intersection Microscopy / Intersection Bioinformatics

LS² PARTNER SOCIETIES

Swiss Chemical Society (SCS), division of Medicinal Chemistry & Chemical Biology (DMCCB)
Swiss Society for Anatomy, Histology and Embryology (SSAHE)
Swiss Society for Experimental Pharmacology (SSEP)
Swiss Laboratory Animal Science Association (SGV)

LS² IS A MEMBER OF THE SWISS ACADEMY OF SCIENCES

scnat
swiss academy of sciences

LS² EUROPEAN AND INTERNATIONAL AFFILIATIONS

EBSA
Biophysics in Europe

FEBS

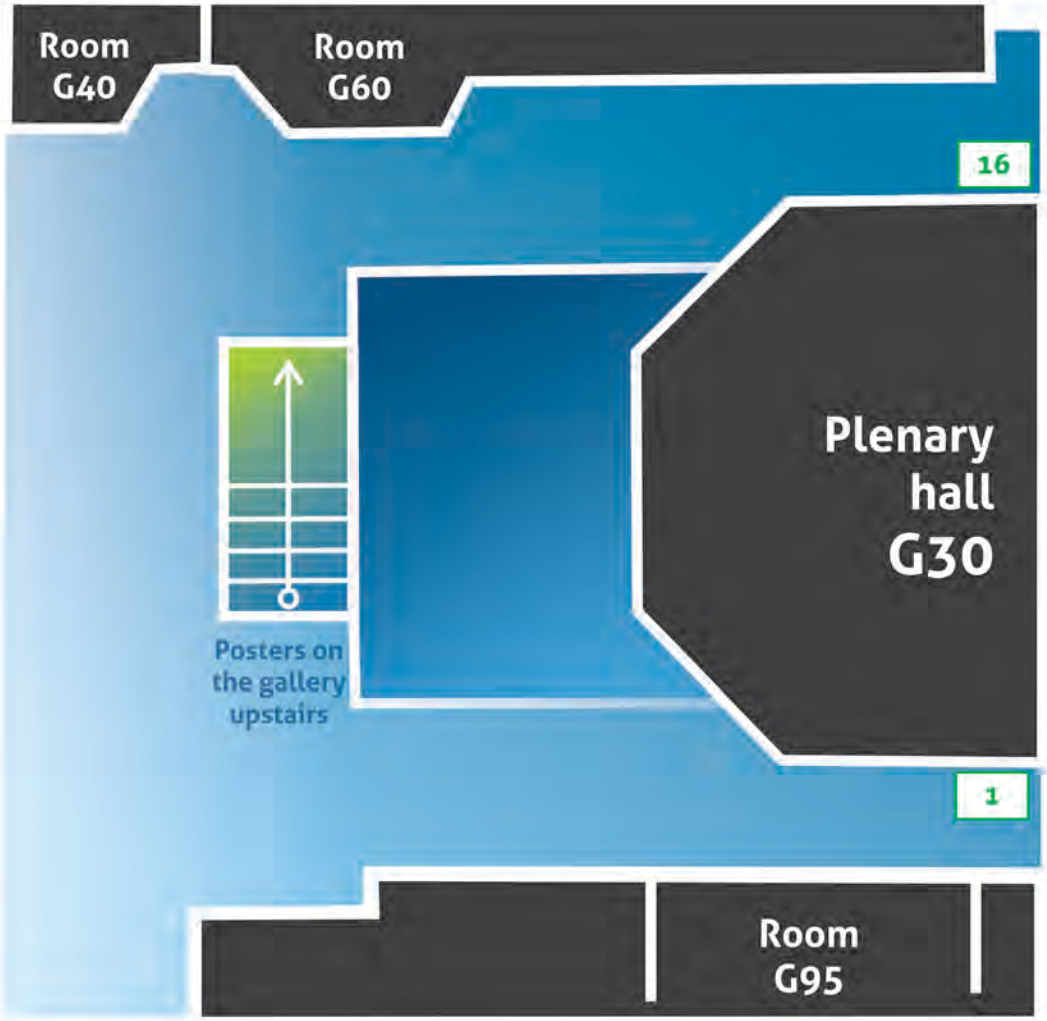
Federation of European Physiological Societies
FEPS
1991

EuPA
EUROPEAN PROTEOMICS ASSOCIATION

IUBMB
INTERNATIONAL UNION OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

ascb
an international forum for cell biology

FLOOR PLAN LECTURES AND EXHIBITION



Registration — Registration

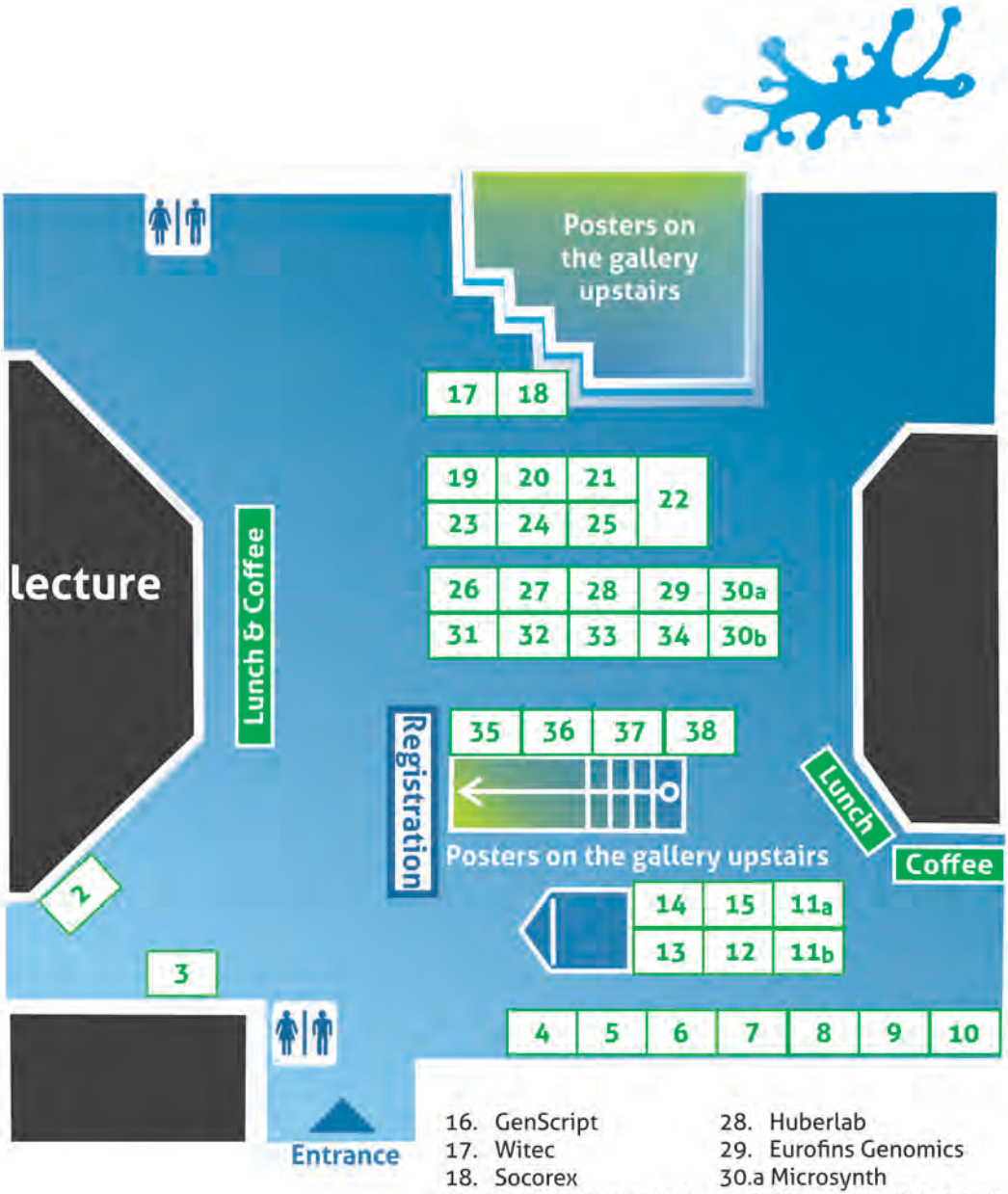
Catering zones

9 10 — Exhibition booths

37-40 — Poster boards

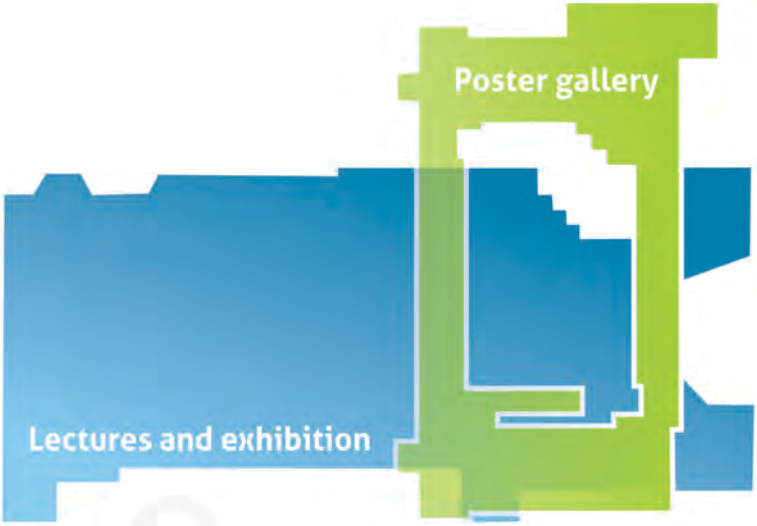
EXHIBITORS

1. Eppendorf
2. Vitaris
3. Bachem
4. Life Systems Design
5. Hybrigenics
6. Twist Bioscience
7. I&L Biosystems
8. Med Tech Trading

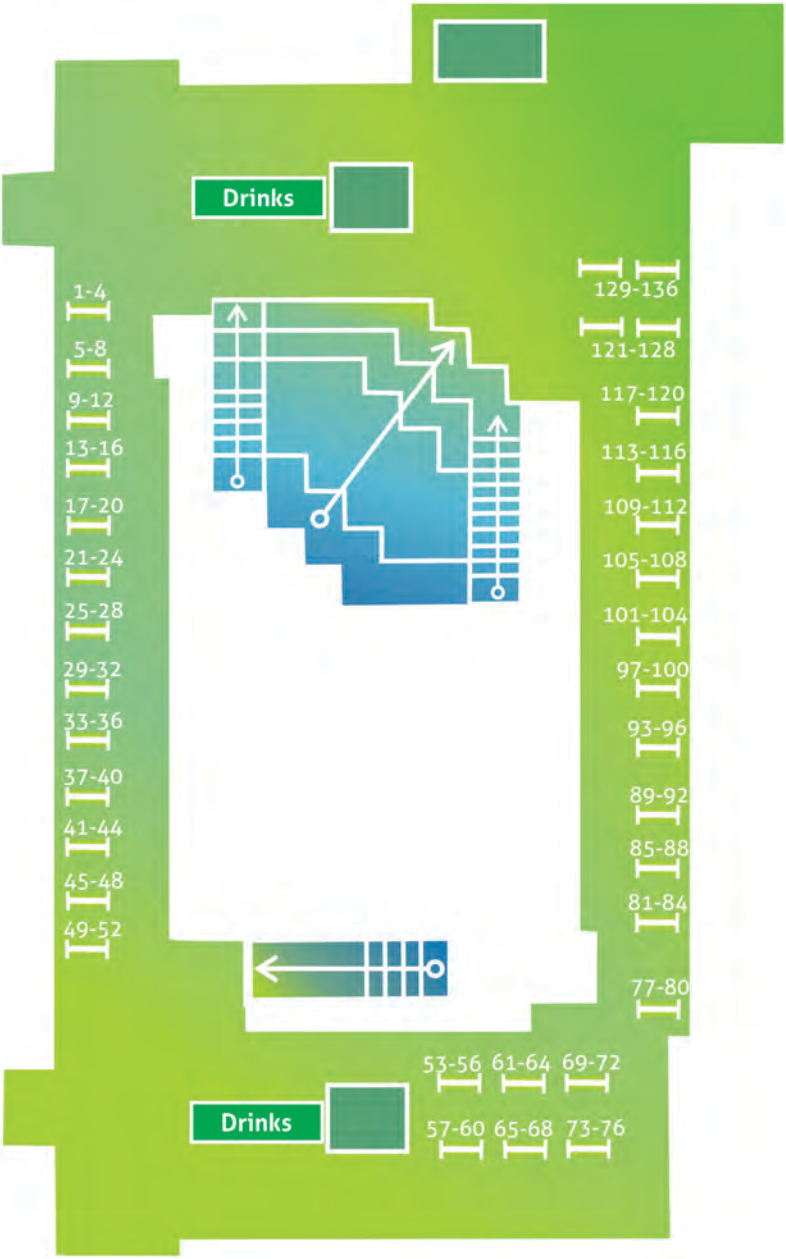


9. Promega
10. Charles River
11.a Jackson ImmunoResearch
11.b SIB Swiss Inst. of Bioinformatics
12. Thermo Fisher Scientific
13. PeproTech
14. opnMe.com
15. BRAND
16. GenScript
17. Witec
18. Socorex
19. Chemie Brunschwig
20. BMG Labtech
21. Enzo Life Sciences
22. Merck
23. Labgene
24. LubioScience
25. -II-
26. BioTek Instruments
27. Bio-techne
28. Huberlab
29. Eurofins Genomics
30.a Microsynth
30.b Biosystems & LabForce
31. Bucher Biotec
32. Takara Bio Europe
33. BioConcept
34. -II-
35. Omni Life Sciences
36. Axon Lab
37. Roth
38. IGZ Instruments

FLOOR PLAN POSTER GALLERY



FLOOR PLAN POSTER GALLERY



YOUNG SCIENTISTS' SATELLITE MEETING PROGRAM

WEDNESDAY 12.02.2020, 12:30 – 17:30

12:30 – 13:00 **REGISTRATION, WELCOME COFFEE, MOUNTING OF POSTERS**

13:00 – 13:05
Lecture hall G95

WELCOME ADDRESS
Fiona Doetsch (Chair of the FEBS3+ LS² Annual Meeting 2020, Biozentrum, University of Basel)
Urs Greber (President of LS², University of Zurich)

13:05 – 13:40
Lecture hall G95

KEYNOTE LECTURE
Paola Picotti (ETH Zurich)
"Proteomes in 3D"
Chair: Nabil Hanna (University of Geneva)

13:40 – 14:30
Lecture hall G95

Scientific Symposium I
Chair: Nabil Hanna (University of Geneva)

Michael Bachmann Poster #51, (University of Geneva, CH)
"Ligand binding promiscuity of $\alpha v\beta_3$ integrin is enlarged in response to mechanical force"

Daniel Robert Weilandt Poster #130 (EPF Lausanne, CH)
"Particle-based simulation reveals macromolecular crowding effects on the Michaelis-Menten parameters"

Anming Huang Poster #63 (Medical University of Innsbruck, AT)
"Phosphorylation of Drosophila CENP-A on serine 20 regulates protein turn-over and centromere-specific loading"

Ludovica Vanzan Poster #81 (University of Geneva, CH)
"SOX2 acts as A "Super Pioneer Transcription Factor" by inducing replication-dependent DNA demethylation at its binding sites"

Pavel Barahtjan Poster #2 (Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, DE)
"Measuring lipid trans-bilayer movement in cells and model membranes"

14:30 – 15:00 **COFFEE BREAK, POSTER VIEWING**

15:00 – 15:25
Lecture hall G95

PRIX SCHLÄFLI (SCNAT) Award lecture

Chair: Pia Stieger (Platform Biology, SCNAT)

Rebekka Wild (University of Grenoble, FR)
"Control of eukaryotic phosphate homeostasis by SPX inositol polyphosphate sensor domains"

15:25 – 16:00

Scientific Symposium II

Chair: Fanny Georgi (University of Zurich)

Leonie Swart Poster #48 (University of Zurich, CH)
"Divergent evolution of Legionella RCC1 repeat effectors defines the range of Ran GTPase cycle targets"

Irma Querques Poster #5 (University of Zurich, CH)
"Mechanisms and design of the Sleeping Beauty transposon for genome engineering"

Timo Rey Poster #79 (EPF Lausanne, CH)
"Mitochondrial RNA granules are liquid condensates positioned by membrane dynamics"

Chiara Borsari Poster #98 (University of Basel, CH)
"Targeted therapy for neurological disorders: A novel, orally available and brain-penetrant mTOR inhibitor (PQR626)"

Seimia Chebbi Poster #103 (University of Geneva, CH)
"Therapeutic resistance in leukaemia: implication of the tyrosine kinase c-kit and integrin crosstalk"

Iwona Olejniczak Poster #76 (University of Fribourg, CH)
"Light your way up to a better mood. Can light help us combat mood disorders?"

16:00 – 16:30

COFFEE BREAK, POSTER VIEWING

16:30 – 17:30
Lecture hall G95

CAREER SYMPOSIUM

Panel Discussion "How to find one's career match?"

Chairs: Fanny Georgi (University of Zurich)
& Nabil Hanna (University of Geneva)

Paola Picotti (Principal investigator at the Institute of Molecular Systems Biology, ETH, Zurich, CH)

Ute Budliger (CEO Dr. Budliger GmbH Institute for Horticultural Therapy and "Flower Your Mind" and Program Manager of the feminno career programme of the Zurich-Basel Plant Science Center, CH)

Oliver Biehlmaier (Head of Imaging Core Facility, UNIBAS and LS² Microscopy board, Basel, CH)

Barbara Janssens (Head of DKFZ Career Service & Alumni Relations, German Cancer Research Center, Heidelberg, DE)

17:30 – open end

MEET & GREAT APÉRO WITH LS² ANNUAL MEETING 2020 SPEAKERS & LS2 DELEGATES

SATELLITE MEETING:
PUBLIC PANEL DISCUSSION ON VACCINOLOGY

WEDNESDAY 12.02.2020, 18:45 – 21:00

LS² Life Sciences Switzerland

Free Public Panel:
Vaccination
in Disease Prevention

Vaccination is one of the greatest achievements in the history of medicine. It is effective against many viral infections in humans and animals, and against non-viral disease. Increasingly, people in the western world are hesistant about vaccination, and thereby put children and adults at risk to develop disease, such as Measles. Scientists from Switzerland, Germany and France are inviting the public to discuss questions regarding vaccination, both in German or English.

PLENARY SPEAKERS

Martin Bachmann
(Oxford University, UK & University of Bern, CH)
"Vaccination against chronic diseases"

Thomas Mertens
(University of Ulm, DE)
"Vaccination in Society - Experience from Germany"

Florian Klein
(University of Köln, DE)
"Vaccination against Ebola"

Nolwenn Jouvenet (Institut Pasteur, Paris, FR)
"Vaccination against yellow fever: a success story"
(Talk in English)

12.02.2020, 18:45-21:00
UZH Campus Irchel
Theater hall F65

CHAIRS

Urs Greber & Christian Münz
(University of Zurich, CH)

MODERATOR

Jan Fehr (University of Zurich, CH)

Participation is open to the general public!

The panel is part of the FEBS3+ LS2 Annual Meeting 2020
(https://annual-meeting.ls2.ch/specials/publicpanel)

MAIN CONFERENCE
PROGRAM OVERVIEW DAY ONE

(detailed program on pages 28-35)

THURSDAY 13.02.2020

08:00 – 09:00 Lichthof area	**REGISTRATION, WELCOME COFFEE, MOUNTING OF POSTERS**
09:00 – 09:10 Lecture hall G30	**WELCOME ADDRESS** Fiona Doetsch (Chair of the FEBS3+ LS² Annual Meeting 2020, Biozentrum, University of Basel) Urs Greber (President of LS², University of Zurich)
09:10 – 09:45 Lecture hall G30	**PLENARY LECTURE I** **Alex Schier** (Biozentrum, University of Basel) "Cellular biographies: reconstructing developmental trajectories and lineages"
09:45 – 09:55	**Plenary flash talks**
09:55 – 10:30	**COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING**
10:30 – 12:20 Lecture hall G30	**SPECIAL PLENARY SESSION** **PIs OF TOMORROW - THE FUTURE OF SWISS RESEARCH**
12:20 – 12:30	**Plenary flash talks**
12:40 – 14:45 Room F68 (downstairs)	**FEEDBACK SESSION PIs OF TOMORROW** *For jury, chairs, and finalists only* *Lunch bags will be delivered into the room*
12:30 – 13:45	**LUNCH BREAK, INDUSTRY EXHIBITION, POSTER VIEWING**
13:45 – 15:45	**PARALLEL SYMPOSIA I**
13:45 – 15:45 Lecture hall G40	**1 – UBIQUTIN SIGNALING & STRESS RESPONSES / PROTEIN TRANSPORT & SORTING** **by the FEBS3+ co-organizing societies GBM & ÖGMBT**
13:45 – 15:45 Lecture hall G60	**2 - SMART MICROSCOPY: MACHINE LEARNING APPLIED TO LIFE SCIENCES** **by new LS² intersections Bioinformatics & Microscopy**

13:45 – 15:45 Lecture hall G95	**3 – REPAIR STRATEGIES FOR THE HEART & THE VESSELS / IMMUNOMETABOLIC CONTROL OF CANCER AND CHRONIC DISEASES** **by LS² Intersection Cardiovascular Biology & LS² Section Physiology**
15:45 – 16:15	**COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING**
15:45 – 16:15 Room F68	**LS² Molecular & Cellular Biosciences Section Board Meeting** *(upon invitation only)*
16:15 – 16:45 Lecture hall G30	**FRIEDRICH-MIESCHER-AWARD LECTURES** **Greta Guarda** (IRB Bellinzona) "Mechanisms regulating cytotoxic immune responses" & **Nicola Aceto** (Department of Biomedicine, University of Basel) "Biology and vulnerabilities of circulating tumor cells"
16:45 – 16:50 Lecture hall G30	**FEBS and its Journals & FEBS 2020 congress** Urs Greber (President of LS² & FEBS Letters Editorial Board) Janko Kos (FEBS 2020 Congress chair, Ljubljana, Slovenia)
16:50 – 17:00 Lecture hall G30	**EU funding for Research and Innovation on the frame of Horizon Europe** Emmanouil Fragkoulis (Chair of the Science and Society Committee, FEBS & University of Athens)
17:00 – 17:35 Lecture hall G30	**PLENARY LECTURE II** **Erin Schuman** (Max-Planck-Institute for Brain Research, Frankfurt, DE) "Protein synthesis at neuronal synapses"
17:35 – 18:55	**POSTER SESSION & INDUSTRY EXHIBITION** **The full Apéro with food will only start after this session to allow an uninterrupted interactions at posters and booths! So please grab a drink and enjoy!** ***Odd numbers: 17:35 – 18:15*** ***Even numbers: 18:15 – 18:55***
19:00 – 20:20	**GET-TOGETHER APÉRO** *+ free viewing of posters & industry exhibition*
20:20 – 21:05 Room F68 (downstairs)	**LS² Delegates Assembly** *(upon invitation only)*

MAIN CONFERENCE
PROGRAM OVERVIEW DAY TWO

(detailed program on pages 36-47)

FRIDAY 14.02.2020

09:00 – 09:35 Lecture hall G30	**PLENARY LECTURE III** **"THE EMBO KEYNOTE LECTURE"** **Melina Schuh** (Max-Planck-Institute for Biophysical Chemistry, Göttingen, DE) "New insights into spindle assembly and causes of aneuploidy in mammalian eggs"
09:35 – 09:40	**A WORD FROM THE MEETING CHAIR FIONA DOETSCH**
09:40 – 10:10	**COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING**
10:10 – 12:00	**PARALLEL SYMPOSIA II**
10:10 – 12:00 Lecture hall G40	**1 – CELL POLARIZATION & MORPHOGENESIS** **by LS² Section Molecular & Cellular Biosciences**
10:10 – 12:00 Lecture hall G60	**2 - PROTEOMICS IN FOOD, NUTRITION AND HEALTH SCIENCES** **by LS² Section Proteomics**
10:10 – 12:00 Lecture hall G95	**3 – CELL BIOLOGY OF INFECTION** **by Swiss Society for Microbiology Section "Molecular Microbiology"**
12:00 – 13:00	**LUNCH BREAK & INDUSTRY EXHIBITION**
12:00 – 13:00 Room F68	**SSEP Board Meeting** *Upon invitation only*
13:00 – 14:00	**POSTER SESSION** ***Odd poster numbers: 13:00 – 13:30*** ***Even poster numbers: 13:30 – 14:00*** **Last chance to fill your poster quiz & exhibition lottery sheet!** **Please bring them to the registration desk by 15:00!**

14:00 – 15:50 PARALLEL SYMPOSIA III

14:00 – 15:50
Lecture hall G40
1 – CHROMATIN ORGANIZATION AND EPIGENETIC REGULATION
by LS² Section Molecular & Cellular Biosciences

14:00 – 15:50
Lecture hall G60
2 – NEURAL STEM CELLS DURING DEVELOPMENT AND IN ADULTHOOD
by Swiss Society for Neuroscience

14:00 – 15:50
Lecture hall G95
3 – BIOLOGICAL SYSTEMS ON THE MOLECULAR SCALE
by the new LS² Section Biophysics

15:50 – 16:20 COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING
and in parallel:

15:50 – 16:20
Lecture hall G95
LS2 General Assembly
All members are welcome & have voting rights!

16:20 – 16:50
Lecture hall G30
PLENARY LECTURE IV
THE LELIO ORCI AWARD LECTURE
Silvia Arber (Biozentrum, University of Basel & FMI Basel)
"Circuits for movement"

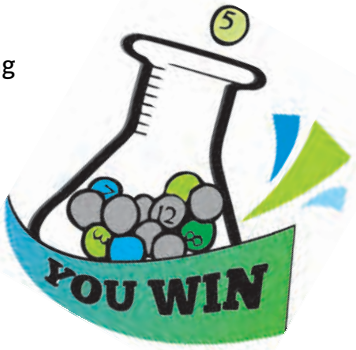
16:50 – 17:25
Lecture hall G30
PLENARY LECTURE V
Ya-Chieh Hsu (Harvard University, US)
"Nerve-stem cell interactions in the skin"

17:25– 17:50
Lecture hall G30
AWARD CEREMONIES
1. Prix Schläfli
2. PIs of Tomorrow Award
3. Poster Prizes
4. Exhibition Lottery draw
5. Poster Quiz draw

17:50 – 18:00
Lecture hall G30
CLOSING REMARKS & ACKNOWLEDGMENTS
Fiona Doetsch (Chair of the FEBS3+ LS² Annual Meeting 2020, Biozentrum, University of Basel)
Urs Greber (President of LS², University of Zurich)

18:00 END OF THE CONFERENCE

EXHIBITION LOTTERY



Answer the following questions at the exhibitor booths, collect stickers on your sticker sheet (inset in the meeting booklet), and **bring the sheet back to the registration desk before 14.2.2020, 15:00.**
Then, be present during the big lottery draw at the end of the meeting to win the following great prizes!

Our sponsors of the three lottery prizes are:

1. PRIZE: **Noise-cancelling headphones**

IGZ Instruments
booth #38
Estimate how long it takes to purify DNA/RNA from tissue without centrifugation with QuickGene (Fujifilm - WAKO):
a) 5 min; b) 10 min; c) 30 min; d) 45 min

2. PRIZE: **A Manor Gift Card**

Jackson ImmunoResearch
booth #11a
When using a Jackson ImmunoResearch Goat secondary antibody what is the ideal block to prevent cross reactivity?

3. PRIZE: **A voucher for the Orell Füssli book store**

VITARIS
booth #2
How many Giant Microbes can you find on our booth?

All other participating exhibitors & their questions:

Axon Lab *booth #36*
How long does it take you to test 5 samples on the NanoPhotometer®N120?

Bachem *booth #3*
When will Bachem AG celebrate its 50th anniversary?

BioConcept *booth #33-34*
Where are the cell culture media, buffers and supplements produced by BioConcept?

Bio-Techne *booth #27*
What are the core life science brands that make up Bio-Techne?

BioTek *booth #26*
What is the benefit of our BioSpa8 with our Imager/Reader Cytation 5?

BMG Labtec *booth #20*
This year, BMG LABTECH is celebrating a company anniversary. For how many years has BMG LABTECH been in the microplate reader business?

BRAND *booth #15*
Where is the <STEP> button located on the new BRAND HandyStep® touch repetitive pipette?

Bucher Biotec *booth #31*
How many fluorescent colors can you image in parallel with the Logos Celena S digital microscope?

Charles River *booth #10*
How many generations of continues brother and sister mating are needed to create an INBRED strain? 10, 20, 30, or 40??

Chemie Brunschwig *booth #19*
Who is our new supplier specialized in electrophoresis? Find the answer in one of the exhibited products.

Enzo Life Sciences *booth #21*

1. Which one is not an Enzo's Technology Platform?

□ Live cell analysis □ Chemicals Analysis □ Immunoassays □ Genomics □ Immunohistochemistry □ Small Molecule

2. What is the name of Enzo's distribution platform?

Eurofins Genomics *booth #29*

The thing I love most about my lab is...

GenScript *booth #16*

GenScript is the company with the largest market share in the world in Gene Synthesis. How much is it?

A) 5% B) 10% C) 20% D) 30%

(Source: QYResearch report 2018)

Huberlab *booth #28*

Which well-known supplier is leading in the field of M3D Nano technology?

Hybrigenics *booth #5*

How many VHH-Antibodies does the synthetic humanized naive Llama VHH library contain?

I&L Biosystems *booth #7*

Transfer as many spheroids as possible into a new bioreactor vessel and set the correct rotation speed on the BioArray Matrix system.

Labgene *booth #23*

Which volumes can you homogenize with our new Precellys Evolution?

Life Systems Design *booth #4*

Starlab's RPT: What does RPT stand for?

LubionScience *booth #24-25*

Spin our Wheel of Fortune, win a fantastic price and receive your stamp!

Med Tech Trading *booth #8*

Come with a smile and pick up a little candy/chocolate!

MERC *booth #22*

How many people are working worldwide for the entire Merck Company?

Microsynth *booth #30a*
In 1989, where have the first Microsynth oligonucleotides been produced?
A) ETH student room B) Garage or C) ISO 13485 certified lab?

Omni Life Sciences *booth #35*
What is your preferred solution to improve and simplify your cell culture for viable and mature iPSC, spheroids and organoids?

opnMe.com *booth #14*
Fame or Future? Would you qualify for our Boehringer Ingelheim post-doc program? Find it out at our booth!

PeproTech *booth #13*
Which is PeproTech's best-selling protein?

ROTH *booth #37*
Our company is celebrating its 140th birthday! Get your free step counter at our booth, do 140 steps, and get your sticker!

SIB *booth #11b*
Join one of "Bioinformatics Resources for Life Scientists" demonstrations! (Multiple different resources will be presented, and participants can decide which one to join).

Socorex *booth #18*
Guess how many pipette tips are in the vase?

Takara Bio Europe *booth #32*
Which medium does Takara offer for the derivation, maintenance, expansion, and differentiation of human and mouse neural stem (NS) cells?

Thermo Fisher Scientific *booth #12*
What does the term "advanced verification" mean when talking about antibodies?

Twist Bioscience *booth #6*
On what material does Twist Bioscience print their DNA?

Witec *booth #17*
Which µVolume Spectrophotometer uses Acclaro Sample Intelligence Technology to detect contaminations in the sample?

Promega *booth #9*
What is called a tool on Promega.com helping you to choose the right product for your cloning workflow?

Biosystems & LabForce *booth #30b*
What kind of tissue is on the slide of the Grundium scanner?

Eppendorf *booth #1*
What kind of lid variants of 25 ml Tubes are available at Eppendorf?

POSTER QUIZ

Each poster presenter who submitted a quiz question (see blue questions in poster list starting on page 48) will find a sticker sheet at his/her poster. The presenter should give a sticker to every poster visitor who answered the question correctly. The collected stickers can then be put onto the poster quiz sheet (inset in the meeting booklet), and brought back to the registration desk until 14.2.2020, 15:00.

During the award ceremonies at the end of the conference, be present to potentially win the following prize for collecting the most stickers!

PRIZE: **A STA Travel voucher for your next holiday trip**

Jackson ImmunoResearch Europe Ltd

kindly sponsored by:

Jackson ImmunoResearch
booth #11a

DETAILED PROGRAM DAY ONE

THURSDAY 13.02.2020

08:00 – 09:00 **REGISTRATION, WELCOME COFFEE, MOUNTING OF POSTERS**

09:00 – 09:10
Lecture hall G30

WELCOME ADDRESS
Fiona Doetsch (Chair of the FEBS3+ LS² Annual Meeting 2020, Biozentrum, University of Basel)
Urs Greber (President of LS², University of Zurich)

09:10 – 09:45
Lecture hall G30

PLENARY LECTURE I

Alex Schier (Biozentrum, University of Basel)
"Cellular biographies: reconstructing developmental trajectories and lineages"

The development of systems ranging from embryos to metastases is governed by molecular differentiation trajectories and cell division lineage relationships. I will describe our recent efforts to use single-cell RNA sequencing and CRISPR-Cas9 genome editing to generate new tools to reconstruct developmental trajectories and lineage trees at very large scales. Using axial mesoderm and brain development as examples, I will discuss the opportunities and challenges for these technologies to provide new views of development (also see McKenna et al. Science 2016; Farrell et al. Science 2018; Raj et al. Nature Biotechnology 2018).

09:45 – 09:55

Plenary flash talks

Jenny Sülzle (EPFL Lausanne), Poster #12
"Multi-color label-free imaging with interferometric scattering microscopy (iSCAT)"

Lydie Lane
(Swiss Institute of Bioinformatics Geneva), Poster #114
"neXtProt tools for the identification and validation of human proteins by mass spectrometry"

Saori Yoshii (ETH Zurich), Poster #88
"Compartmentalization of mitochondria during asymmetric cell division"

9:55 – 10:30 COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING

10:30 – 12:20
Lecture hall G30

SPECIAL PLENARY SESSION

PIs OF TOMORROW - THE FUTURE OF SWISS RESEARCH

Chairs: Elisa Araldi (ETH Zurich), *Sophia Verouti* (University of Bern), *Nabil Hanna* (University of Geneva) *and Shalu Jhanwar* (University of Basel)

This session offers an opportunity to postdocs and senior researchers interested in pursuing an academic career to present a talk similar in format to a professorship application interview. The finalists below have been pre-selected from 60 eligible applicants. A knowledgeable jury panel of professors will evaluate the presentations and provide feedback in a one-on-one session afterward.

Jury members of the 2020 edition:

Michele de Palma (EPF Lausanne)
Stefanie Jonas (ETH Zurich)
Raffaella Santoro (University of Zurich)
Guillaume Diss (FMI Basel)
Marlen Knobloch (University of Lausanne)
Beat Fierz (EPF Lausanne)

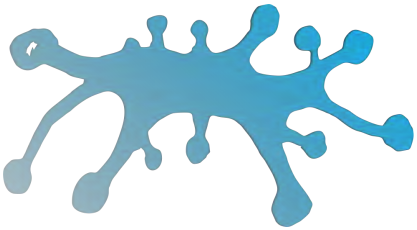
10:30 – 10:35 **INTRODUCTORY WORDS BY THE CHAIRS OF THE SESSION**

The finalists of the 2020 edition:

10:35 – 11:00 **Eleonora Porcu** (University of Lausanne)
"A statistical approach for dissecting the causal molecular underpinning of complex diseases"

11:00 – 11:25 **Thomas Auer** (University of Lausanne)
"The making of an olfactory specialist"

11:25 – 11:50	**Olga Murina** (MRC Human Genetics Unit, Edinburgh, UK) "The Enemy Within: Mapping Cellular Responses to Endogenous DNA Damage"
11:50 – 12:15	**Joachim Moser von Filseck** (University of Geneva) "The ESCRT-III-mediated membrane deformation reconstituted *in vitro*"
12:15 – 12:20	**CONCLUDING REMARKS**
Afterwards	**Collection of public votes & feedback session for jury and finalists only (see below)**
12:20 – 12:30	**Plenary flash talks**
	Roberto Gianni Barrera (University of Basel), Poster #31 "Lateral Induction of Dll4 Expression Initiates non Sprouting Angiogenesis by VEGF"
	Nabil Hanna (University of Geneva), Poster #44 "Time-resolved RNA-seq profiling of *D. discoideum* infection by *M. marinum* reveals an integrated host response to damage and stress"
	Andrea Picco (University of Geneva), Poster #11 "Comparative cell biology of endocytosis in yeasts"
12:40 – 14:45 Room F68 (downstairs)	**FEEDBACK SESSION PIs OF TOMORROW** *For jury, chairs, and finalists only* *Lunch bags will be delivered into the room*
12:30 – 13:45	**LUNCH BREAK, INDUSTRY EXHIBITION, POSTER VIEWING**



13:45 – 15:45 **PARALLEL SYMPOSIA I**

13:45 – 15:45
Lecture hall G40

1 – UBIQUTIN SIGNALING & STRESS RESPONSES / PROTEIN TRANSPORT & SORTING
by the FEBS3+ co-organizing societies GBM & ÖGMBT

Ubiquitin Signalling and Stress Responses
by the German Society for Biochemistry and Molecular Biology (GBM)
Chair: Blanche Schwappach (University Medical Center Göttingen, DE)

Invited speakers

13:45 – 14:15 **Konstanze Winklhofer** (Ruhr-University Bochum, DE)
"Ubiquitination and protein quality control: implications for neurodegenerative diseases"

14:15 – 14:45 **Thorsten Hoppe** (University of Cologne, DE)
"Impact of food perception on proteostasis & aging"

Protein Transport and Sorting
by the Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)
Chair: Lukas A. Huber (Innsbruck Medical University, AT)

Invited speakers

14:45 – 15:15 **Jean Gruenberg** (University of Geneva)
"Membrane tension in multivesicular endosome biogenesis"

15:15 – 15:45 **David Teis** (Innsbruck Medical University, AT)
"Selective membrane protein degradation pathways"

13:45 – 15:45
Lecture hall G60

2 - SMART MICROSCOPY: MACHINE LEARNING APPLIED TO LIFE SCIENCES
by the new LS² intersections Bioinformatics & Microscopy
Chairs: Sara Mitri (University of Lausanne & SIB Swiss Institute of Bioinformatics)
& Oliver Biehlmaier (Biozentrum, University of Basel)

With kind support from Zeiss & Nikon

Invited speakers

13:45 – 14:10 **Ilaria Testa** (KTH Royal Institute of Technology, SE)
"Smart RESOLFT for adaptive live cell imaging"

14:10 – 14:35 **Henning Stahlberg** (C-CINA, University of Basel)
"Cryo-electron microscopy investigations of neurodegeneration: a mechanistic model for the development and progression of Parkinson's disease"

14:35 – 15:00 **Knut Drescher**
(Max-Planck Institute for Terrestrial Microbiology, DE)
"Learning the space-time phases of bacterial multicellular behavior"

15:00 – 15:25 **Tobias Sing**
(Novartis Institutes for BioMedical Research NIBR, Basel)
"A deep learning-based model of normal histology"

Afterwards: **Panel discussion on the use of smart microscopy and deep learning**

13:45 – 15:45
Lecture hall G95

3 – REPAIR STRATEGIES FOR THE HEART & THE VESSELS / IMMUNOMETABOLIC CONTROL OF CANCER AND CHRONIC DISEASES
by LS² Intersection Cardiovascular Biology
& LS² Section Physiology

Repair Strategies for the Heart and the Vessels

by LS² Intersection Cardiovascular Biology
Chairs: Marie-Noëlle Giraud (University of Fribourg)
& Andrea Banfi (University Hospital Basel)

Invited speaker

13:45 – 14:15 **Seppo Ylä-Herttuala** (University of Eastern Finland, FI)
"Vascular endothelial growth factors to repair heart"

Speakers from abstracts

14:15 – 14:25 **Ines Marques** (University of Bern), poster #28
"Disruption of extracellular matrix stiffness during scar formation hinders zebrafish heart regeneration"

14:25 – 14:35 **Andrea Uccelli** (University Hospital Basel), poster #32
"Beyond pericytes - PDGF-BB accelerates vascular stabilization by stimulating the Semaphorin3A/Neuropilin1+ monocyte axis"

14:35 – 14:45 **Poster flash talks**

Alexander Akhmedov (University of Zurich), poster #25
"TNFα induces Endothelial Dysfunction in Experimental and Clinical Rheumatoid Arthritis via oxLDL Uptake by LOX-1 and Arginase 2 Activation"

Loïc Dumas (University of Fribourg), poster #26
"Effect of fitness prior to a myocardial infarction event"

Grigorios Panteloglou (University of Zurich), poster #29
"The coatomer (COP I) complex limits the cell-surface abundance of the LDL receptor and cellular LDL uptake"

Immunometabolic Control of Cancer and Chronic Diseases
by LS² Section Physiology
Chair: Xiu-Fen Ming (University of Fribourg)

Invited speaker

14:45 – 15:15 **Ping-Chih Ho** (University of Lausanne)
"What intratumoral Tregs eat makes them strong and vulnerable: a new metabolicintervention for cancer immunotherapy"

Speakers from abstracts

15:15 – 15:25 **Dobrochna Dolicka** (University of Geneva), poster #17
"Tristetraprolin promotes hepatic inflammation and tumour initiation but restrains cancer progression to malignancy"

15:25 – 15:35 **Andrii Kuklin** (ETH Zurich), poster #66
"Cross-talk of the cytoprotective transcription factors Nrf2 and NF-kB in hepatocytes suppresses spontaneous liver inflammation and fibrosis"

15:35 – 15:40

Poster flash talks

Tatjana Kleele (EPF Lausanne), poster #64
"Distinct molecular signatures of fission predict mitochondrial degradation or proliferation"

Judith Wenzina (Medical University Vienna, AT), poster #86
"Inhibition of p38/MK2 signaling prevents vascular invasion of melanoma"

15:45 – 16:15

COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING

15:45 – 16:15
Room F68
(downstairs)

LS² Molecular & Cellular Biosciences Section Board Meeting *(upon invitation only)*

16:15 – 16:45
Lecture hall G30

FRIEDRICH-MIESCHER-AWARD LECTURES

Chair: Daniel Legler ((Biotechnology Institute Thurgau - BITg)

Greta Guarda (IRB Bellinzona)
"Mechanisms regulating cytotoxic immune responses" &
Nicola Aceto (Department of Biomedicine, University of Basel)
"Biology and vulnerabilities of circulating tumor cells"

16:45 – 16:50
Lecture hall G30

FEBS and its Journals & FEBS 2020 congress announcement FEBS logo
Urs Greber (President of LS² & FEBS Letters Editorial Board)
Janko Kos (FEBS 2020 Congress chair, Ljubljana, Slovenia)

16:50 – 17:00
Lecture hall G30

Emmanouil Fragkoulis (Chair of the Science and Society Committee, FEBS & University of Athens)
"EU funding for Research and Innovation on the frame of Horizon Europe"

16:50 – 17:25
Lecture hall G30

PLENARY LECTURE II

Erin Schuman
Max-Planck-Institute for Brain Research, Frankfurt, DE
"Protein synthesis at neuronal synapses"

The complex morphology of neurons, with synapses located 100's of microns from the cell body, necessitates the localization of important cell biological machines and processes within dendrites

and axons. Using expansion microscopy together with metabolic labeling we have discovered that both postsynaptic spines and presynaptic terminals exhibit rapid translation, which exhibits differential sensitivity to different neurotransmitters and neuromodulators. These data suggest that selective translation of mRNAs in response to different extracellular cues can give rise to plasticity phenotypes at both sides of the synapse. In addition, we have explored the unique mechanisms neurons use to meet protein demands at synapses.

17:25 – 18:55 **POSTER SESSION & INDUSTRY EXHIBITION**

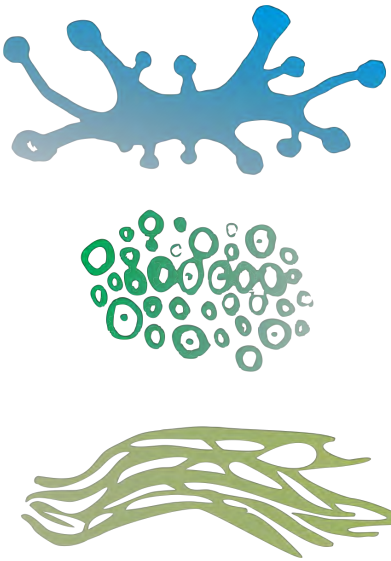
The full Apéro with food will only start after this session to allow for uninterrupted interactions at posters and booths! **So grab a drink and enjoy!**

Odd numbers: 17:25 – 18:10
Even numbers: 18:10 – 18:55

18:55 – 20:20 **Get-Together Apéro**

Plus free viewing of posters & industry exhibition

20:20 – 21:05 **LS² Delegates Assembly** *(upon invitation only)*
Room F68 (downstairs)



DETAILED PROGRAM DAY TWO

FRIDAY 14.02.2020

09:00 – 09:35
Lecture hall G30

PLENARY LECTURE III

"THE EMBO KEYNOTE LECTURE"

Melina Schuh (Max-Planck-Institute for Biophysical Chemistry, Göttingen, DE)

"New insights into spindle assembly and causes of aneuploidy in mammalian eggs"

The Schuh lab studies meiosis in mammalian oocytes. In particular, we are interested in how oocytes segregate their chromosomes, and how aneuploidy arises from chromosome segregation errors. Our interests focus on how chromosome architecture changes with advancing maternal age, and how cytoskeletal structures, in particular actin and microtubules, cooperate to drive chromosome segregation in meiosis. I will present our latest research on spindle assembly and causes of aneuploidy in female meiosis.

09:35 – 09:40 **A WORD FROM THE MEETING CHAIR FIONA DOETSCH**

09:40 – 10:10 COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING

10:10 – 12:00 PARALLEL SYMPOSIA II

10:10 – 12:00
Lecture hall G40

1 – CELL POLARIZATION & MORPHOGENESIS

by LS² Section Molecular & Cellular Biosciences

Chair: Sophie Martin (University of Lausanne)

Invited speaker I

10:10 – 10:40 **Jean-Léon Maître** (Institute Curie, FR)
"Mechanics of blastocyst morphogenesis"

Speakers from abstracts

10:40 – 10:50 **Veneta Gerganova** (University of Lausanne), poster #58
"Patterning of membrane-associated proteins by membrane flows"

10:50 – 11:00

Martina Hersberger (University of Zurich), poster #60
"Sterol-rich membrane domain formation and polarization during microtubule-controlled cell polarization"

11:00 – 11:10

Timo Rey (EPF Lausanne), poster #79
"Mitochondrial RNA granules are liquid condensates positioned by membrane dynamics"

11:10 – 11:25

Poster flash talks

Vera Belyaeva (IST Austria, AT), poster #52
"Transcription factors of bZIP family tune macrophage invasive migration in Drosophila embryo"

Sasha Kuhn (Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, DE), poster #65
"Kinetics and Information Processing in G Protein-Coupled Receptor Mediated Signalling"

Marine Laporte (University of Geneva), poster #67
"Revealing the composition of the centriolar central core by ultra-expansion microscopy"

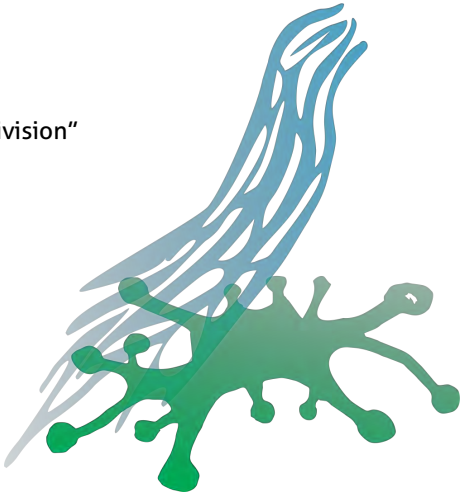
Sandro Meier (ETH Zurich), poster #71
"Liquid phase separation of +TIPs in mitotic spindle positioning in budding yeast"

Paulina Nowak (University of Geneva), poster #75
"Interaction between plasma membrane tension and mTOR complex 2: Lessons learned from drugging membranes"

11:25 – 11:55

Invited speaker II

Buzz Baum (MRC LMCB, UK)
"The evolution of cell division"



10:10 – 12:00
Lecture hall G60

2 - PROTEOMICS IN FOOD, NUTRITION AND HEALTH SCIENCES

by LS² Section Proteomics

Chairs: Ornella Cominetti & Loïc Dayon
(Nestlé Institute of Health Sciences)

Invited speaker I

10:10 – 10:40 **Nicolai Jacob Wewer Albrechtsen**
(University of Copenhagen, DK)
"Mass Spectrometry Based Plasma Proteomic Profiling of Metabolic Diseases"

Speakers from abstracts

10:40 – 10:50 **Christian Ahrens** (Agroscope), poster #117
"An integrated model system to study biofilm-associated adaptation to antimicrobials and resistance evolution in Pseudomonas aeruginosa MPAO1"

10:50 – 11:05 **Poster flash talks**

Mitsugu Shimobayashi (University of Basel), poster #109
"Diet-induced loss of adipose Hexokinase 2 triggers hyperglycemia"

Marie-Pierre Meurville
(University of Fribourg), poster #113
"Diffusion, content and evolution of socially exchanged fluids in ant colonies"

Paolo Nanni / Witold Wolski
(University of Zurich), poster #115
"FGCZ-GSEA-ORA: a Tool for Pathway Analysis in Proteomics"

Christian Schori (Agroscope), poster #116
"From *de novo* genome assembly to multispecies proteogenomic based identification of novel sProteins"

Matej Vizovisek (ETH Zurich), poster #118
"Integrative profiling of apoptotic proteolysis using SEC-SWATH/DIA complex-centric proteomics and TAILS terminomics"

Invited speaker II

11:05 – 11:35 **Michael Affolter** (Nestlé Research, Lausanne)
"Food Peptidomics - unique peptides, unique functions"

Industry speakers

11:35 – 11:45 **Kostas Theofilatos** (InSyBio)
"Machine learning and network analytics empowered biomarker discovery in nutrition and healthcare using proteomics data"

11:45 – 11:55 **Nicolai Bache** (Evosep Biosystems)
"Advancing towards standardized proteomic workflows"

10:10 – 12:00
Lecture hall G95

3 – CELL BIOLOGY OF INFECTION
by Swiss Society for Microbiology Section "Molecular Microbiology"
Chairs: Melanie Blokesch (EPF Lausanne) *&*
Hubert Hilbi (University of Zurich)

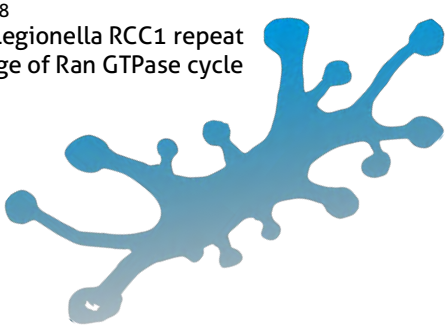
Invited speaker I

10:10 – 10:40 **Agathe Subtil** (Institut Pasteur Paris, FR)
"Host metabolism rewiring during infection by Chlamydia trachomatis"

Speakers from abstracts

10:40 – 10:55 **Thomas Simonet**
(EPF Lausanne), poster #47
"High-content screening using microfluidics to identify genes involved in antibiotic persistence of uropathogenic *Escherichia coli* (UPEC)"

10:55 – 11:10 **Leoni Swart**
(University of Zurich), poster #48
"Divergent evolution of Legionella RCC1 repeat effectors defines the range of Ran GTPase cycle targets"



11:10 – 11:25

Poster flash talks

Prity Yadav
(National Institute of Immunology, New Delhi, IN), poster #7
"A new class E sortase endowed with wider substrate tolerance for expanded peptide ligation applications"

Artur Yakimovich
(University College, London, GB), poster #36
"Mimicry embedding for advanced neural network training of 3D biomedical micrographs"

Sandrine Isaac (EPF Lausanne), poster 44B
"Deciphering the potential of Vibrio cholerae to colonize mammalian intestines"

Ana Kalichava (University of Bern), poster #45
"The mitochondrial genome maintenance machinery in *Trypanosoma brucei*: characterization and visualization of novel components"

Ophélie Rutschmann (EPF Lausanne), poster #46
"Heterogeneity in the interactions between Mycobacterium tuberculosis and macrophages"

11:25 – 11:55

Invited speaker II
Serge Mostowy
(London School of Hygiene and Tropical Medicine, UK)
"Use of the cytoskeleton to control Shigella infection"

12:00 – 13:00 LUNCH BREAK & INDUSTRY EXHIBITION

12:00 – 13:00
Room F68
(downstairs)

SSEP Board Meeting
Upon invitation only

13:00 – 14:00 POSTER SESSION
Odd poster numbers: 13:00 – 13:30
Even poster numbers: 13:30 – 14:00

Last chance to fill your poster quiz & exhibition lottery sheets!
Please bring them to the registration desk by 15:00!

14:00 – 15:50 **PARALLEL SYMPOSIA III**

14:00 – 15:50
Lecture hall G40

1 – CHROMATIN ORGANIZATION AND EPIGENETIC REGULATION
by LS² Section Molecular & Cellular Biosciences
Chairs: Silvia Monticelli (Institute for Research in Biomedicine - IRB)
& Daniel Legler (Biotechnology Institute Thurgau - BITg)

Invited speaker I

14:00 – 14:30 **Raffaella Santoro** (University of Zurich)
"Genome organization in and around the nucleolus"

Speakers from abstracts

14:30 – 14:40 **Rodrigo Villaseñor** (University of Zurich), poster #129
"ChromID reveals the proteome composition of key chromatin states in murine stem cells"

14:40 – 14:45 **Andréa Willemin** (University of Geneva), poster #43
"Setting Topological Boundaries: In and Out of Context"

14:45 – 15:00 **Poster flash talks**

Lukas Muerner (EPF Lausanne), poster #4
"Cell-Type-Specific Expression of Siglec-7 and -9 is Associated with Differential Promoter Methylation"

Marwa Almosailleakh (University of Basel), poster #15
"Loss of the nuclear interacting SET domain protein 1 (NSD1) in mice impairs erythroid maturation and result in an erythroleukemia-like disease"

Maria Dimitriu (ETH Zurich), poster #55
"A novel combinatorial sequencing approach to profile several epigenetic factors together in mammalian cells"

Ludovica Vanzan (University of Geneva), poster #81
"SOX2 acts as a "Super Pioneer Transcription Factor" by inducing replication-dependent DNA demethylation at its binding sites"

Invited speaker II

15:00 – 15:30 **Luca Giorgetti** (FMI Basel)
"Towards a quantitative understanding of chromosome structure"

Industry speakers

15:30 – 15:50 **Markus Koester & Florian Montel**
(opnMe.com), booth #14
"opnMe.com: A new source to access well-characterized molecular tools to understand epigenetic regulation in human diseases"

14:00 – 15:50
Lecture hall G60

2 – NEURAL STEM CELLS DURING DEVELOPMENT AND IN ADULTHOOD
by Swiss Society for Neuroscience
Chair: Marlen Knobloch (University of Lausanne)

Invited speaker I

14:00 – 14:30 **Barbara Treutlein** (ETH Zurich)
"Reconstructing development and regeneration using single-cell genomics"

Speakers from abstracts

14:30 – 14:40 **Zayna Chaker** (University of Basel), poster #91
"Spatial and temporal recruitment of adult neural stem cells during pregnancy"

14:40 – 15:00 **Poster flash talks**

Markus Holzner (ETH Zurich), poster #62
"Genetic screening for Hedgehog modulators in haploid Neuronal Stem Cells"

Clarisse Brunet Avalos (University of Fribourg), poster #90
"Single cell transcriptome atlas of the Drosophila larval brain"

Cyrielle Kaltenrieder (University of Fribourg), poster #94
"Nervous system evolution - Insights from sea anemones and marine worms"

Gioele La Manno (EPF Lausanne), poster #128
"A comprehensive map of mammalian nervous system development from gastrulation to birth"

Invited speaker II

15:00 – 15:30 **María Llorens Martín** (Universidad Autónoma de Madrid, ES)
"Human adult hippocampal neurogenesis during physiological and pathological aging"

Industry speakers

15:30 – 15:40 **Cornelia Rössler** (Merck Chemicals), booth #22
"Alzheimer's In A Dish™: 3D Neural Stem Cell Models of Alzheimer's Disease"

15:40 – 15:50 **Felix Krombholz**
(Takara Bio Europe), booth #32
"A fully defined, serum-free culture system for efficient neural stem cell maintenance and differentiation"

14:00 – 15:50
Lecture hall G95

3 – BIOLOGICAL SYSTEMS ON THE MOLECULAR SCALE
by the new LS² Section Biophysics
Chairs: Aleksandra Radenovic & Beat Fierz
(both EPF Lausanne)

With kind support from Mad City Labs

Invited speaker I

14:00 – 14:30 **Madhavi Krishnan** (University of Oxford, UK)
"Bringing electrostatics to light: Electrometry probes a new dimension at the molecular scale"

Speakers from abstracts

14:30 – 14:40 **Zena Hadjivasiliou** (University of Geneva), poster #9
"Recycling of the intracellular Dpp pool mediates gradient expansion and scaling"

14:40 – 14:50 **Stefano Vanni** (University of Fribourg), poster #13
"Towards a molecular view of lipid droplet biogenesis"

14:50 – 15:05 **Poster flash talks**
Debabrata Dey (Weizmann Institute of Science, Rehovot, IL), poster #8
"Line-FRAP: A Fast Technique to Measure the Diffusion coefficients of fast diffusing molecules from *in vitro* to *in vivo*"

Bernhard Hochreiter
(Medical University of Vienna, AT), poster #10
"A novel FRET approach quantifies the interaction strength of peroxisomal targeting signals and their receptor in living cells"

Kristina Makasheva (EPF Lausanne), poster #34
"Single-molecule multiplexed decoding system for Cas9 nucleosomes interactions studies"

Oliver Biehlmaier
(Biozentrum. University of Basel), poster #56
"How to implement Expansion Microscopy in a microscopy facility?"

Luca Barberi (University of Geneva), poster #73
"ESCRT-III reshapes membrane vesicles into helical tubes "

Invited speaker II

15:05 – 15:35 **Georg Fantner** (EPF Lausanne)
"High-speed atomic force microscopy: observing molecular self-assembly in action"

Industry speakers

15:35 – 15:45 **Christine Strasser** (ZEISS)
"LSM 9 Family with Airyscan 2: Your Next Generation Confocal for Fast and Gentle Multiplex Imaging"

15:50 – 16:20 COFFEE BREAK, INDUSTRY EXHIBITION, POSTER VIEWING
&
15:50 – 16:20 LS2 General Assembly
Lecture hall G95 **All members are welcome & have voting rights!**

16:20 – 16:50 PLENARY LECTURE IV
Lecture hall G30 THE LELIO ORCI AWARD LECTURE
Chair: Pierre Cosson (University of Geneva)

Silvia Arber (Biozentrum, University of Basel & FMI Basel)
"Circuits for movement"

Movement is the behavioral output of the nervous system. Animals carry out an enormous repertoire of distinct actions, spanning from seemingly simple

repetitive tasks like walking to more complex movements such as forelimb manipulation tasks. This talk will focus on our recent work elucidating the organization and function of neuronal circuits at the core of regulating distinct motor behaviors in the mouse. It will show that dedicated circuit modules within different brainstem nuclei and their interactions in the motor system play key roles in action diversification.

16:50 – 17:25
Lecture hall G30

PLENARY LECTURE V

Ya-Chieh Hsu (Harvard University, US)
""Nerve-stem cell interactions in the skin"

Empirical and anecdotal evidence has associated stress with accelerated hair greying (formation of unpigmented hairs), but so far there has been little scientific validation of this link. Here we report that, in mice, acute stress leads to hair greying through the fast depletion of melanocyte stem cells. Using a combination of adrenalectomy, denervation, chemogenetics, cell ablation and knockout of the adrenergic receptor specifically in melanocyte stem cells, we find that the stress-induced loss of melanocyte stem cells is independent of immune attack or adrenal stress hormones. Instead, hair greying results from activation of the sympathetic nerves that innervate the melanocyte stem-cell niche. Under conditions of stress, the activation of these sympathetic nerves leads to burst release of the neurotransmitter noradrenaline (also known as norepinephrine). This causes quiescent melanocyte stem cells to proliferate rapidly, and is followed by their differentiation, migration and permanent depletion from the niche. Transient suppression of the proliferation of melanocyte stem cells prevents stress-induced hair greying. Our study demonstrates that neuronal activity that is induced by acute stress can drive a rapid and permanent loss of somatic stem cells, and illustrates an example in which the maintenance of somatic stem cells is directly influenced by the overall physiological state of the organism.

17:25– 17:50
Lecture hall G30

AWARD CEREMONIES

1. Prix Schläfli

Chair: *Marc Creus* (Platform Biology, SCNAT)

Awardee: Rebekka Wild (University of Grenoble, FR)
for her thesis:
"Control of eukaryotic phosphate homeostasis by SPX inositol polyphosphate sensor domains"

2. PIs of Tomorrow Award

Jury & Public Award

3. Poster Prizes

1. The Swiss Young Cell Biologist of the Year
awarded by the LS² section MCB, which consists of a free registration to the American Society for Cell Biology (ASCB) Meeting 2020, 5-9 December 2020, Philadelphia, PA, US & a travel grant of 1400 CHF to the meeting, sponsored by SCNAT & Biotek

2. Physiology Poster prize
awarded by the LS² section Physiology and realized by the Physiology department of UNIGE

3. Poster prize of the Swiss Society of Experimental Pharmacology (SSEP)

4. Two FEBS letters poster prizes
given to a PhD student or an early-stage post-doc presenting unpublished work that fits within the scope of FEBS Letters - "basic research studies that are novel, advance knowledge, and provide mechanistic insights"

4. Exhibition Lottery draw

1.PRIZE: Noise-cancelling headphones
sponsored by IGZ Instruments, booth #38

2.PRIZE: A Manor gift card
sponsored by Jackson ImmunoResearch, booth #11a

3. PRIZE: A voucher for the Orell Füssli book store
sponsored by VITARIS, booth #2

5. Poster Quiz draw:

Prize: A 500 CHF travel voucher by STA Travel
sponsored by Jackson ImmunoResearch, booth #11a

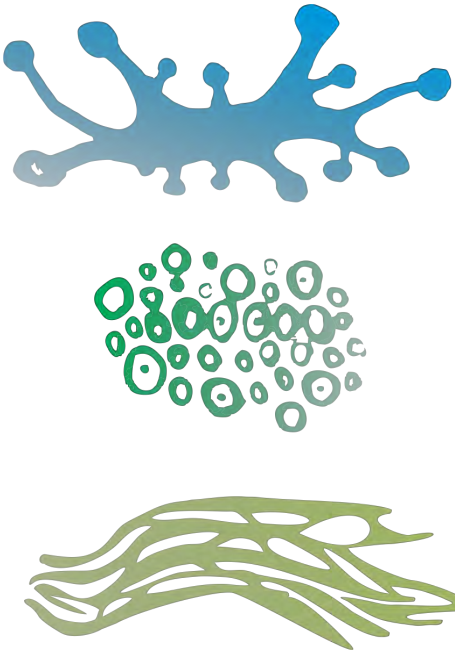
17:50 – 18:00
Lecture hall G30

CLOSING REMARKS & ACKNOWLEDGMENTS

Fiona Doetsch (Chair of the FEBS3+ LS² Annual Meeting 2020, Biozentrum, University of Basel)

Urs Greber (President of LS², University of Zurich)

18:00 **END OF THE CONFERENCE**



POSTERS

SORTED BY PRIMARY CATEGORY NAME AND POSTER NUMBER & WITHIN CATEGORIES BY FAMILY NAME

***= last author(s)**
°= shared authorships

1
Apoptosis
Autophagy

Non-apoptotic roles of the BCL-2 family member BOK

Naim, Samara
Samara Naim (1), Daniel Bachmann (1), Yuniel Fernandez-Marrero (1), Thomas Kaufmann (1)*
(1) University of Bern, Institute of Pharmacology

2
Biochemistry
Chemical Biology

Quiz question: What is the main advantage of the caging group?

Measuring lipid trans-bilayer movement in cells and model membranes

Barahtjan, Pavel
Pavel Barahtjan (1), Milena Schuhmacher (1)°, Cristina Jiménez (1)°, André Nadler (1)*
(1) Max-Planck-Institute of Molecular Cell Biology and Genetics

3
Biochemistry
Chemical Biology

Microalgae diversity as a versatile source for sustainable biocatalysts

Labrou, Nikolaos
Elisavet Ioannou (1)°, Evangelia Chronopoulou (1)°, Nikolaos Georgakis (1)°, Panagiotis Madesis (2)°, Nikolaos Labrou*
(1) Agricultural University of Athens, Biotechnology
(2) Institute of Applied Biosciences, CERTH

4
Biochemistry
Cancer Biology
Immunology

Quiz question: What is the methylation status of the SIGLEC9 promoter in CD8+ T cells in peripheral blood of healthy donors?

Cell-Type-Specific Expression of Siglec-7 and -9 is Associated with Differential Promoter Methylation

Mürner, Lukas
Lukas Mürner (1)°, Kayluz Frias Boligan (1)°, Stephan von Gunten (1)*
(1) University of Bern, Institute of Pharmacology

5
Biochemistry
Synthetic Biology
Structural Biology

Mechanisms and design of the Sleeping Beauty transposon for genome engineering

Querques, Irma
Irma Querques (1), Cecilia Zuliani (2), Franka Voigt (3), Orsolya Barabas (4)*
(1) European Molecular Biology Laboratory, Heidelberg, Germany; Department of Biochemistry, University of Zurich, Switzerland (present address)
(2) European Molecular Biology Laboratory, Heidelberg, Germany
(3) European Molecular Biology Laboratory, Heidelberg, Germany; Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland (present address)
(4) European Molecular Biology Laboratory, Heidelberg, Germany

6
Biochemistry
Molecular and Cellular Biosciences

Quiz question: Which is the main functional domain of the protein targeted in the study?

Emerin's LEM domain, a critical player for maintenance of foreign DNA in the cytoplasm

Schenkel, Laura
Laura Schenkel, Xuan Wang, Nhung Le, Michael Burger, Lorenz Hug, Ludovic Gillet, Yves Barral, Ruth Kroschewski (1)
(1) ETH Zurich

7
Biochemistry
Microbiology

Quiz question: What are the enzymes that ligate two amino acids called?

A new class E sortase endowed with wider substrate tolerance for expanded peptide ligation applications

Yadav, Prity
Prity Yadav (1)
(1) National Institute of Immunology, Cell Biology Lab-II

8
Biophysics
Biochemistry
Confocal Microscopy

Quiz question: How DIFFUSION can be measured from FRAP studies?

Line-FRAP: A Fast Technique to Measure the Diffusion coefficients of fast diffusing molecules from *in vitro* to *in vivo*

Dey, Debabrata
Dr. Debabrata Dey (1)°, Shir Marciano (1)°, Prof. Gideon Schreiber (1)°
(1) Weizmann Institute of Science, Israel, Dept. of Biomolecular Sciences

9
Biophysics
Developmental biology

Recycling of the intracellular Dpp pool mediates gradient expansion and scaling

Hadjivasiliou, Zena

Zena Hadjivasiliou (1)°, Maria Romanova-Michaelides (1)°, Daniel Aguilar-Hildago (2)°, Frank Julicher (2), Marcos Gonzalez-Gaitan (1)*
(1) University of Geneva, Biochemistry
(2) Max Planck Institute for the Physics of Complex Systems, Biological Physics

10
Biophysics

Quiz question: What does the up-stream sequence of peroxisomal targeting signal 1 (PTS1) modulate?

A novel FRET approach quantifies the interaction strength of peroxisomal targeting signals and their receptor in living cells

Hochreiter, Bernhard
Bernhard Hochreiter (1), Chong Cheng Shoong (2)°, Andreas Hartig (3)°, Sebastian Mauer-Stroh (2)°, Johannes Berger (4)°, Johannes A. Schmid (1)°, Markus Kunze (4)*
(1) Medical University Vienna, Center for Physiology and Pharmacology, Institute for Vascular Biology and Thrombosis Research
(2) Technology and Research (A*STAR), Singapore, Bioinformatics Institute (BII)
(3) University of Vienna, Department of Biochemistry and Cell Biology, Max F. Perutz Laboratories
(4) Medical University Vienna, Center for Brain Research, Department of Pathobiology of the Nervous System

11
Biophysics
Microbiology

Comparative cell biology of endocytosis in yeasts

Picco, Andrea
Andrea Picco (1), Anne-Sophie Rivier (2)°, Markus Mund (2)°, Jonas Ries (3)°, Marko Kaksonen (1)*
(1) University of Geneva, Department of Biochemistry and NCCR Chemical Biology
(2) University of Geneva, Department of Biochemistry
(3) EMBL, Heidelberg, Cell Biology and Biophysics

12
Biophysics
Structural Biology

Quiz question: How can you do multi-color imaging without labels?

Multi-color label-free imaging with interferometric scattering microscopy (iSCAT)

Sülzle, Jenny
Jenny Sülzle (1), Sofia Magkiriadou (1)°, Suliana Manley (1)*
(1) EPFL, School of Basic Sciences

13
Biophysics

Towards a molecular view of lipid droplet biogenesis

Vanni, Stefano
Stefano Vanni (1)*, Valeria Zoni (1)°, Rasha Khaddaj (1)°, Pablo Campomanes (1)°, Abdou Rachid Thiam (2)°, Roger Schneiter (1)°
(1) University of Fribourg, Department of Biology
(2) Ecole Normale Superieure, Paris, Department of Physics

14
Biophysics
Molecular and Cellular Biosciences

Quiz question: What other roles apart from producing ATP do mitochondria fulfill?

The Where, What and When of Mitochondrial Dynamics

Winter, Julius
Julius Winter (1)°, Tatjana Kleele (1)°, Suliana Manley (1)*
(1) EPFL, Basic Science

15
Cancer Biology

Loss of the nuclear interacting SET domain protein 1 (NSD1) in mice impairs erythroid maturation and result in an erythroleukemia-like disease

Almosailleakh, Marwa
Marwa Almosailleakh (1), Katharina Leonards (1)°, Samantha Tauchmann (1)°, Frederik Otzen Bagger (2)°, Cecile Thirant (3), Sabine Juge (1), Hélène Mereau (1), Matheus F. Bezerra, Alexandar Tzankov (4), Thomas Bock (5), Robert Ivanek (6), Régine Losson (7), Antoine H.f.m. Peters (8), Thomas Mercher (3), Juerg Schwaller (1)*
(1) University Children's Hospital Basel, University of Basel , Department of Biomedicine
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(3) Gustave Roussy Institute, Université Paris Diderot, Université Paris-Sud, Equipe Labellisée Ligue Contre le Cancer
(4) University Hospital Basel, Institute for Pathology
(5) University of Basel, Proteomics core facility, Biozentrum
(6) University of Basel, Swiss Institute of Bioinfomatics
(7) Université de Strasbourg, Institute de Génétique et de Biologie Moléculaire et Cellulaire
(8) Friedrich Miescher Institute for Biomedical Research, University of Basel

16
Cancer Biology
Stem Cells

Understanding the cellular origin of leukaemia transformation

Châtel-Soulet, Hugues-Étienne
Hugues-Étienne Châtel-Soulet (1), Sabine Juge-Ehret (2)°, Jüerg Schwaller (1)*
(1) Childhood Leukaemia Group, UKBB, University of Basel, Department of Biomedicine
(2) Childhood Leukaemia Group, UKBB, University of Basel, Department of Biomedicine

17
Cancer Biology
Physiology
Metabolism and Cancer

Tristetraprolin promotes hepatic inflammation and tumour initiation but restrains cancer progression to malignancy

Dolicka, Dobrochna
Dobrochna Dolicka (1)°, Cyril Sobolewski (1)°, Monika Gjorgjieva (1), Marta Correia de Sousa (1), Flavien Berthou (1), Claudio De Vito (2), Didier Colin (3), Olivia Bejuy (3), Margot Fournier (1), Christine Maeder (1), Perry

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(3) University Hospitals and University of Geneva, Small Animal Preclinical Imaging Platform
(4) National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709, USA, The Laboratory of Signal Transduction

18
Cancer Biology
Biochemistry

Cooperative Interaction between ERα and ZEB1 Mediates Global Reprogramming of ERα Signaling during EMT in Breast Cancer

Ghahhari, Nastaran
Nastaran Ghahhari (1), Nicolas Hulo (2)°, Didier Picard (1)*
(1) University of Geneva, Cell Biology
(2) University of Geneva, Institute of Genetics and Genomics of Geneva

19
Cancer Biology
Drug resistance

Genome-wide CRISPR/Cas9 knock-out screen identifies new players of endocrine resistance in breast cancer

Hany, Dina
Dina Hany (1), Didier Picard (1)*, Nicolas Hulo (2)°
(1) University of Geneva, Cell Biology
(2) University of Geneva, Institute of Genetics and Genomics

20
Cancer Biology

Quiz question: Which three drugs are in the final low-dose combination?

Optimized multidrug combination for the treatment of metastatic renal cell carcinoma decreasing the migratory capacity

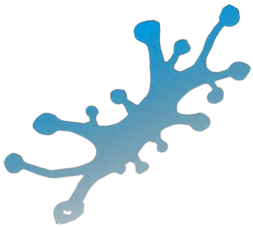
Rausch, Magdalena
Magdalena Rausch (1)°, Marloes Zoetemelk (1)°, George Mourad Ramzy (1)°, Andrea Weiss (2)°, Patrycja Nowak-Sliwinska (1)*
(1) Institute of Pharmaceutical Sciences of Western Switzerland, Pharmaceutical Sciences
(2) School of Pharmaceutical Sciences, University of Geneva, University of Lausanne, Pharmaceutical Sciences

21
Cancer Biology
Molecular and Cellular Biosciences

Quiz question: In which organism was the Cas9 protein discovered?

Identification of physiologically relevant EWS-FLI1 target genes in Ewing sarcoma via CRISPRa screening

Saratov, Vadim
Vadim Saratov (1), Qui Ngo (1), Gloria Pedot (1), Felix K. Niggli (1), Beat W. Schäfer (1)*
(1) University Children's Hospital Zurich, Oncology



22
Cancer Biology
Systems Biology

Redefinition of ErbB2/3 tumor targeting: Novel platform for development of truly efficient anti-ErbB bispecific and biparatopic agents

Tamaskovic, Rastislav
Rastislav Tamaskovic (1), Martin Schwill (1)°, Andreas Plückthun (1)*
(1) University of Zurich, Department of Biochemistry

23
Cancer Biology
Neuroscience

Quiz question: How metastatic cancer cells in the brain interact with neurons to promote their invasive growth?

Synaptic proximity enables NMDAR signalling to promote brain metastasis

Zeng, Qiqun
Qiqun Zeng (1)°, Douglas Hanahan (1)*
(1) Swiss Institute for Experimental Cancer Research (ISREC), School of Life Sciences, Swiss Federal Institute of Technology Lausanne (EPFL)

24
Cancer Biology
Biochemistry

Extensive Downregulation of Anticoagulant Heparan Sulfate in Invasive Forms of Endometrioïd Carcinoma

Zouggari, Nawel
Nawel Zouggari (1), Isabelle Dentand Quadri (1), Jean-Christophe Tille (2), Ariane de Agostini (1)
(1) Geneva University Medical School, Department of Pathology and Immunology
(2) Geneva University Hospitals, Department of Clinical Pathology

25
Cardiovascular Biology
Genetics

TNFα induces Endothelial Dysfunction in Experimental and Clinical Rheumatoid Arthritis via oxLDL Uptake by LOX-1 and Arginase 2 Activation

Akhmedov, Alexander
Alexander Akhmedov (1), Margot Crucet (1)°, Branko Simic (1)°, Nicole Bonetti (1)°, Luca Liberale (1)°, Caroline Ospelt (2)°, Oliver Distler (2)°, Adrian Ciurea (2)°, Matti Jauhiainen (3)°, Jari Metso (3)°, Frank Ruschitzka (4)°, Paul M. Vanhoutte (5)°, George Kollias (6)°, Giovanni G. Camici (1)°, Thomas F. Lüscher (1)*
(1) University of Zurich, Center for Molecular Cardiology
(2) University Hospital Zurich, Department of Rheumatology
(3) Minerva Foundation Institute for Medical Research
(4) University Hospital Zurich, University Heart Center, Department of Cardiology
(5) Hong Kong University, Department of Pharmacology
(6) Biomedical Sciences Research Center Alexander Fleming, Institute for Immunology

26
Cardiovascular Biology
Physiology

EFFECT OF FITNESS PRIOR TO A MYOCARDIAL INFARCTION EVENT

Dumas, Loïc
Loïc Dumas (1), Ines Borrego (1), Aurélien Frobert (1), Benoît Fellay (2), Stéphane Cook (1), Marie-Noëlle Giraud (1)*
(1) University of Fribourg, Medecine
(2) Fribourg Cantonal Hospital, Laboratory HFR

27
Cardiovascular Biology
Chemical Biology
Innate Immunity

Quiz question: Which essential cellular function is inhibited by 1-deoxysphingolipids?

1-deoxysphingolipids in anoxic death and innate immunity

Hannich, J. Thomas
J. Thomas Hannich (1)°, A. Galih Haribowo (1)°, Melanie Paillard (2)°, Ludovic Gomez (2)°, Bruno Pillot (2)°, Stefania Vossio (3)°, Dimitri Moreau (3)°, Jean Gruenberg (1)*, Dominik Olszewski (4)°, Urs F Greber (4)*, Laurence Abrami (5)°, F. Gisou van der Goot (5)*, Michel Oviz (2)*, Jean-Claude Martinou (6)*, Howard Riezman (1)*
(1) Geneva University, Biochemistry
(2) Université de Claude Bernard Lyon 1, CarMeN
(3) Geneva University, ACCESS
(4) Zurich University, IMLS
(5) Ecole Polytechnique Fédéral Lausanne, SV-DO
(6) Geneva University, Cell Biology

28
Cardiovascular Biology
Physiology

Disruption of extracellular matrix stiffness during scar formation hinders zebrafish heart regeneration

Marques, Ines
Ines Marques (1), Marcos Sande-Melon (1), Maria Galardi-Castilla (2), Fernando Rodriguez-Pascual (3), Nadia Mercader (1)*
(1) University of Bern, Switzerland., Institute of Anatomy
(2) Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC-ISCIII), Madrid, Spain.
(3) Centro de Biología Molecular Severo Ochoa CBM-CSIC, Madrid, Spain.

29
Cardiovascular Biology

The coatomer (COP I) complex limits the cell-surface abundance of the LDL receptor and cellular LDL uptake

Panteloglou, Grigorios
Grigorios Panteloglou (1), Paolo Zanoni (1), Lucia Rohrer (1), Jan-Albert Kuivenhoven (2), Antoine Rimbert (2), Anne Tybjaerg-Hansen (3), Nawar Dalila (3), Winfried März (4), Arnold von Eckardstein (1)*
(1) University & University Hospital of Zurich, Institute of Clinical Chemistry
(2) University & University Medical Center of Groningen, Department of Pediatrics, Section of Molecular Genetics
(3) Rigshospitalet & Copenhagen University Hospital & University of Copenhagen, Department of Clinical Biochemistry

(4) University of Heidelberg, Fifth Department of Medicine, Medical Faculty Mannheim

30
Cardiovascular Biology
Biochemistry

Scavenger receptor SR-BI splice variants 1 and 2 differ by cellular localization and interaction with HDL and LDL in endothelial cells

Potapenko, Anton
Anton Potapenko (1), Lucia Rohrer (1), Arnold von Eckardstein (1)
(1) USZ, IKC

31
Cardiovascular Biology

Lateral Induction of Dll4 Expression Initiates non Sprouting Angiogenesis by VEGF

Gianni Barrera, Roberto
Andrea Uccelli (1)°, Katie Bentley (2)°, Holger Gerhardt (3)°, Andrea Banfi (1)*
(1) Basel University Hospital, Department of Biomedicine and of Surgery
(2) Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, USA, Pathology
(3) Max-Delbrück Center for Molecular Medicine, Helmholtz Association, Berlin, Germany

32
Cardiovascular Biology
Therapeutic Angiogenesis

Beyond pericytes - PDGF-BB accelerates vascular stabilization by stimulating the Semaphorin3A/Neuropilin1+ monocyte axis

Uccelli, Andrea
Andrea Uccelli (1)
(1) University of Basel, Department of Biomedicine

33
Chemical Biology

Quiz question: Ceramide and sphingosine 1-phosphate, which one promotes cell growth?

Site-specific photo-uncaging to study local sphingolipid metabolism

Feng, Suihan
Suihan Feng (1), Takeshi Harayama (1), Howard Riezman (1)*
(1) University of Geneva, Biochemistry

34
Chemical Biology
Molecular and Cellular Biosciences

Single-molecule multiplexed decoding system for Cas9 nucleosomes interactions studies

Makasheva, Kristina
Kristina Makasheva (1), Louise Bryan (1), Beat Fierz (1)
(1) EPFL, SB ISIC

34B
Chemical Biology
Biochemistry

Quiz question: Why do flipper probes respond to changes in membrane tension?

HaloFlipper: A universal membrane tension reporter

Straková, Karolína
Karolína Straková (1)°, Javier López-Andarias(1)°,Noemi Jimenez-Rojo (2), Howard Riezman (2), Naomi Sakai (1) and Stefan Matile (1)*
(1) University of Geneva, Organic Chemistry
(2)University of Geneva, Biochemistry

35
Computational Biology
Chemical Biology

Quiz question: How can compounds be represented for the application of Natural Language Processing methodologies?

Exploring chemical space for drug discovery using natural language processing methodologies

Ozkirimli, Elif
Hakime Ozturk (1)°, Arzucan Ozgur (1)°, Elif Ozkirimli (2)*
(1) Bogazici University, Computer Science
(2) Bogazici University, Chemical Engineering

36
Computational Biology
Microbiology
Virology

Mimicry embedding for advanced neural network training of 3D biomedical micrographs

Yakimovich, Artur
Artur Yakimovich (1), Moona Huttunen (1), Jerzy Samolej (1), Barbara Clough (2), Nagisa Yoshida (2), Serge Mostowy (3), Eva-Maria Frickel (2), Jason Mercer (1)*
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abstract retracted

38
Drug Discovery
nanotechnology

Quiz question: Why shots Buckyball a leukemic cell only with a herbal cargo?

C60 Fullerene Delivery of Alkaloid Berberine into Leukemic Cells

Grebinyk, Anna
Anna Grebinyk (1), Svitlana Prylutska (2), Olga Matyshevska (3), Yuriy Prylutskyy (2), Thomas Dandekar (4), Marcus Frohme (1)
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(2) Taras Shevchenko National University of Kyiv
(3) Palladin Institute of Biochemistry, NAS of Ukraine
(4) University of Würzburg, Department of Bioinformatics, Biocenter

39
Drug Discovery
Proteomics
Antibodies

The Flycode Technology – Antibody Screening *In Vitro* and *In Vivo*

Sorgenfrei, Michèle
Michèle Sorgenfrei (1), Pascal Egloff (1), Iwan Zimmermann (1), Fabian Arnold (1), Cedric Hutter (1), Lea Hürlimann (1), Justin Walter (1), Lennart Opitz (2), Lucy Poveda (2), Christian Panse (2), Bernd Roschitzki (2), Markus Seeger (1)*
(1) University of Zurich, Institute of Medical Microbiology
(2) University of Zurich, Functional Genomics Center Zürich

40
Genetics
Neuroscience

Role of the 6mA methyltransferase (damt-1) in *C. elegans* long-term memory

Kaspar, Lea
Lea Kaspar (1)
(1) University of Basel, Molecular Neurosciences

41
Genetics
Molecular and Cellular Biosciences

Shaping chromatin during the transition to post-embryonic development in *Caenorhabditis elegans*

Rajopadhye, Shweta Avinash
Shweta Rajopadhye (1), Chantal Wicky (1)
(1) University of Fribourg, Department of Biology

42
Genetics
Molecular and Cellular Biosciences
Chromatin

Shaping chromatin during meiotic prophase in *C. elegans*

Rodriguez Crespo, David
David Rodriguez Crespo (1)°, Magali Nanchen (1)°, Chantal Wicky (1)*
(1) University of Fribourg, Biology

43
Genetics
Genome Architecture

Setting Topological Boundaries: In and Out of Context

Willemin, Andréa
Andréa Willemin (1)°, Eddie Rodríguez-Carballo (1)°, Lucille Lopez-Delisle (2), Denis Duboule (3)*
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44
Microbiology

Time-resolved RNA-seq profiling of D. discoideum infection by M. marinum reveals an integrated host response to damage and stress

Hanna, Nabil
Nabil Hanna (1), Frederic Burdet (2), Cristina Bosmani (1), Astrid Melotti (3), Hubert Hilbi (4), Pierre Cosson (5), Marco Pagni (2), Thierry Soldati (1)*
(1) University of Geneva, Department of Biochemistry
(2) SIB, Vital-IT

(3) Department of Biochemistry, Faculty of medecine
(4) University of Zurich, Institute of Molecular Life Sciences
(5) University of Geneva, Faculty of medecine

44B
Microbiology
Infectious Diseases

Deciphering the potential of *Vibrio cholerae* to colonize mammalian intestines

Isaac, Sandrine
Sandrine Isaac (1), Candice Stoudmann (1), Melanie Blokesch (1)*
(1) Ecole Polytechnique Fédérale de Lausanne (EPFL), Global Health Institute

45
Microbiology
Molecular and Cellular Biosciences

The mitochondrial genome maintenance machinery in Trypanosoma brucei: characterization and visualization of novel components

Kalichava, Ana
Ana Kalichava (1), Torsten Ochsenreiter (1)*
(1) University of Bern, Institute of Cell Biology

46
Microbiology

Heterogeneity in the interactions between Mycobacterium tuberculosis and macrophages

Rutschmann, Ophélie
Ophélie Rutschmann (1), Chiara Toniolo (1), John Mckinney (1)*
(1) EPFL, GHI

47
Microbiology
Infectious Diseases
Antibiotic persistence

Quiz question: What are the advantages of using physiologically relevant conditions in the study of bacterial persistence?

High-content screening using microfluidics to identify genes involved in antibiotic persistence of uropathogenic Escherichia coli (UPEC)

Simonet, Thomas
Thomas Simonet (1), Neeraj Dhar (1), John McKinney (1)*
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48
Microbiology

Divergent evolution of Legionella RCC1 repeat effectors defines the range of Ran GTPase cycle targets

Swart, Leoni
A. Leoni Swart (1), Bernhard Steiner (1)°, Laura Gomez-Valero (2)°, Sabina Schütz (1)°, Mandy Hannemann (3)°, Petra Janning (4)°, Michael Irminger (1)°, Eva Rothmeier (5)°, Carmen Buchrieser (2)°, Aymelt Itzen (6)°, Vikram Govind Panse (1)°, Hubert Hilbi (1)°*
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(3) Technical University Munich, Center for Integrated Protein Science Munich, Department of Chemistry
(4) Max Planck Institut für Molekulare Physiologie
(5) Ludwig-Maximilians University Munich, Max von Pettenkofer Institute
(6) University Medical Center Hamburg-Eppendorf, Institute for Biochemistry and Signal Transduction

49
Molecular and Cellular Biosciences
Proteomics
Protein-Protein Interaction, Target Deconvolution

In vitro selection, validation & optimization of synthetic single-domain antibodies for Tau

Kühnhold, Söhnke
Hybrigenics Services SAS 1, rue Pierre Fontaine, 91000 Evry Courcouronnes, France

50
Molecular and Cellular Biosciences
Parasitology

Quiz question: What type of DNA do find in the kDNA networks?

Characterization of TAP110, a protein associated with the mitochondrial genome segregation machinery in Trypanosoma brucei

Amodeo, Simona
Simona Amodeo (1), Torsten Ochsenreiter (1)*
(1) University of Bern, Institute of Cell Biology

51
Molecular and Cellular Biosciences

Quiz question: What does aVb3 integrin need to bind fibronectin?

Ligand binding promiscuity of αVβ3 integrin is enlarged in response to mechanical force

Bachmann, Michael
Michael Bachmann (1), Markus Schäfer (2), Marta Ripamonti (1), Martin Bastmeyer (2), Bernhard Wehrle-Haller (1)*
(1) University of Geneva, Physiology and Metabolism
(2) Karlsruhe Institute of Technology, Institute of Zoology

52
Molecular and Cellular Biosciences
Genetics

Transcription factors of bZIP family tune macrophage invasive migration in Drosophila embryo

Belyaeva, Vera
Vera Belyaeva (1), Igor Gridchyn (1), Stephanie Wachner (1), Attila Gyoergy (1), Daria Siekhaus (1)*
(1) IST Austria

53
Molecular and Cellular Biosciences
Protein homeostasis

The Hsp70-Hsp90 Co-Chaperone Hop/Stip1 Shifts the Proteostatic Balance from Folding Towards Degradation

Bhattacharya, Kaushik
Kaushik Bhattacharya (1), Lorenz Weidenauer (2)°, Tania Morán Luengo

(3)°, Ellis C. Pieters (3)°, Pablo C. Echeverría (1)°, Lilia Bernasconi (1)°, Diana Wider (1)°, Margreet B. Koopman (3)°, Matthieu Villemin (1)°, Christoph Bauer (4)°, Stefan G. D. Rüdiger (3)°, Manfredo Quadroni (2)°, Didier Picard (1)*
(1) Université de Genève, Département de Biologie Cellulaire
(2) Université de Lausanne, Protein Analysis Facility, Center for Integrative Genomics
(3) Utrecht University, Cellular Protein Chemistry, Bijvoet Center for Biomolecular Research
(4) Université de Genève, Bioimaging Center

54

abstract retracted

55

Molecular and Cellular Biosciences
Genetics
Epigenetics

Quiz question: What can our novel sequencing approach be used to study?

A novel combinatorial sequencing approach to profile several epigenetic factors together in mammalian cells

Dimitriu, Maria
Maria A Dimitriu (1)°, Martin Roszkowski (1)°, Isabelle M Mansuy (1)*
(1) Brain Research Institute, University of Zurich and Institute for Neuroscience, ETH Zurich, Zurich, Switzerland, Laboratory of Neuroepigenetics

56

Molecular and Cellular Biosciences
Biophysics
Microscopy

Quiz question: Which new technique allows resolution below the resolution limit without using a dedicated super resolution microscope?

How to implement Expansion Microscopy in a microscopy facility?

Biehlmaier, Oliver
Alexia Ferrand (1)°, Oliver Biehlmaier (1)*
(1) University of Basel, Imaging Core Facility, Biozentrum

57

Molecular and Cellular Biosciences

HSF1: Phosphorylation regulated repression motif

Gabriel, Stefan
Stefan Gabriel (1), Elisabeth Riegel (1)°, Thomas Czerny (1)*
(1) FH Campus Wien, Molecular Biotechnology

58

Molecular and Cellular Biosciences
Microbiology

Patterning of membrane-associated proteins by membrane flows

Gerganova, Veneta
Veneta Gerganova (1), Iker Lamas (1)°, David Rutkowski (2), Aleksandar Vjestica (1), Dimitris Vavylonis (2), Sophie Martin (1)*

(1) UNIL, Department of Fundamental Microbiology
(2) Lehigh University, Department of Physics

59
Molecular and Cellular Biosciences

Generation of a stable virus like particle-expressing chicken cell line

Grosjean, Sibylle
Sibylle Grosjean (1)°, Brigitte Sigrist (1)°, Nina Wolfrum (1)*
(1) University of Zurich, Department of Poultry and Rabbit Diseases

60
Molecular and Cellular Biosciences

Sterol-rich membrane domain formation and polarization during microtubule-controlled cell polarization

Hersberger, Martina
Martina Hersberger (1), Stephen M. Huisman (1), Adam R. Kijowski (1), David Dreher (1), Damian Brunner (1)*
(1) University of Zurich, Department of Molecular Life Sciences

61
Molecular and Cellular Biosciences
Biochemistry

A competition assay for protein-protein interactions in living cells using FRET

Kunze, Markus
Bernhard Hochreiter (1)°, Johannes Berger (2)°, Johannes A. Schmid (1)°, Markus Kunze (2)*
(1) Medical University of Vienna , Dept. of Vascular Biology and Thrombosis Research
(2) Medical University of Vienna , Dept. for Pathobiology of the Nervous System

62
Molecular and Cellular Biosciences
Neuroscience

Genetic screening for Hedgehog modulators in haploid Neuronal Stem Cells

Holzner, Markus
Markus Holzner (1), Giulio Di Minin (1)*, Anton Wutz (1)*
(1) ETH Zürich, D-Biol

63
Molecular and Cellular Biosciences
Biochemistry
Epigenetics

Phosphorylation of Drosophila CENP-A on serine 20 regulates protein turn-over and centromere-specific loading

Huang, Anming
Anming Huang (1), Leopold Kremser (2)°, Fabian Schuler (3)°, Doris Wilflingseder (4)°, Herbert Lindner (2)°, Stephan Geley (5)°, Alexandra Lusser (1)*
(1) Institute of Molecular Biology, Medical University of Innsbruck
(2) Institute of Clinical Biochemistry, Medical University of Innsbruck
(3) Institute of Developmental Immunology, Medical University of Innsbruck
(4) Institute of Hygiene and Medical Microbiology, Medical University of Innsbruck
(5) Institute of Pathophysiology, Medical University of Innsbruck

64
Molecular and Cellular Biosciences
Mitochondria

Quiz question: What are is the experimental evidence that distinct mitochondria undergo mitophagy?

Distinct molecular signatures of fission predict mitochondrial degradation or proliferation

Kleele, Tatjana
Tatjana Kleele (1), Timo Rey (1), Julius Winter (1), Dora Mahecic (1), Mohamed Nemir (2), Thierry Pedrazzini (2), Suliana Manley (1)
(1) EPFL, Laboratory of Experimental Biophysics
(2) UNIL, Experimental Cardiology Unit

65
Molecular and Cellular Biosciences

Quiz question: Why are kinetics important in signalling cascades?

Kinetics and Information Processing in G Protein-Coupled Receptor Mediated Signalling

Kuhn, Sascha
Sascha Kuhn (1), André Nadler (1)*
(1) Max Planck Institute of Molecular Cell Biology and Genetics, Membrane Chemical Biology

66
Molecular and Cellular Biosciences
Physiology

Cross-talk of the cytoprotective transcription factors Nrf2 and NF-kB in hepatocytes suppresses spontaneous liver inflammation and fibrosis

Kuklin, Andrii
Andrii Kuklin (1)°, Coenraad Frederik Slabber (1)°, Sabine Werner (1)*
(1) Institute of Molecular Health Sciences, ETH Zurich, Department of Biology

67
Molecular and Cellular Biosciences

Quiz question: How many ribosome can fit in the lumen of an empty centriole ?

Revealing the composition of the centriolar central core by ultra-expansion microscopy

Laporte, Marine
Marine Laporte (1), Davide Gambarotto (1), Maeva Le Guennec (1), Nikolai Klena (1), Anne-Marie Tassin (2), Hugo van Den Hoek (3), Philipp Erdmann (3), Miroslava Schaffer (3), Lubomir Kovacik (4), Susanne Borgers (1), Kenneth Goldie (4), Henning Stahlberg (4), Michel Bornens (5), Juliette Azimzadeh (6), Benjamin Engel (3), Virginie Hamel (1), Paul Guichard (1)
(1) University of Geneva, Cell Biology
(2) Institute for Integrative Biology of the Cell
(3) Max Planck Institute of Biochemistry, Department of Molecular Structural Biology
(4) University of Basel
(5) Institut Curie
(6) Institut Jacques Monod

68
Molecular and Cellular Biosciences
DNA damage and repair

Quiz question: What might be the role of RNF43 in DNA damage and repair?

The DNA-damage response player, ring-finger protein 43, relieves

etoposide-induced topoisomerase II poisoning

Lerksuthirat, Tassanee
Tassanee Lerksuthirat (1), Rakkreat Wikiniyadhanee (2)°, Wasana Stitchantrakul (1)°, Sermsiri Chitphuk (1)°, Nauljun Stansook (3)°, Donniphat Dejsuphong (2)*
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(2) Mahidol University, Section for Translational Medicine
(3) Mahidol University, Division of Radiotherapy and Oncology, Department of Diagnostic and Therapeutic Radiology

69
Molecular and Cellular Biosciences
Structural Biology
Super-resolution microscopy

Quiz question: What are the two main ways image stitching benefits from large field-of-view, uniform excitation?

Homogeneous multi-focal excitation for high-throughput super-resolution imaging

Mahecic, Dora
Dora Mahecic (1), Davide Gambarotto (2), Kyle M. Douglass (1), Denis Fortun (3), Niccoló Banterle (4), Maeva Le Guennec (2), Khalid Ibrahim (5), Pierre Gönczy (4), Virginie Hamel (2), Paul Guichard (2), Suliana Manley (5)*
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(2) University of Geneva, Department of Cell Biology
(3) University of Strasbourg, ICube, CNRS
(4) École Polytechnique Fédérale de Lausanne , Institute for Experimental Cancer Research, School of Life Sciences
(5) École Polytechnique Fédérale de Lausanne , Institute of Physics

70
Molecular and Cellular Biosciences
Cellular biology and metabolism

SIRT1-MEDIATED RESPONSE IS CRITICAL FOR RESVERATROL TO ENHANCE ANTIGLYCATIVE AND ANTIOXIDANT DEFENCES IN HIGH GLUCOSE-CHALLENGED HUVECS

Maihemuti, Mijiti
Mijiti Maihemuti (1), Silvano Santini S. (2), Valeria Cordone (1), Virginio Bignotti (1), Stefano Falone (1), Fernanda Amicarelli (1)
(1) University of L'Aquila, Department of Life, Health and Environmental Sciences
(2) University of L'Aquila, Department of Life, Health and Environmental SciencesDepartment of Life, Health and Environmental Sciences

71
Molecular and Cellular Biosciences
Biochemistry

Quiz question: Which budding yeast +TIP is a perfectly soluble protein?

Liquid phase separation of +TIPs in mitotic spindle positioning in budding yeast

Meier, Sandro
Sandro Meier (1), Ana-Maria Farcas (2), Anil Kumar (3), Michel Steinmetz (3)*, Yves Barral (2)
(1) ETH Zürich, PSI Villigen, D-BIOL, LBR
(2) ETH Zürich, D-BIOL
(3) PSI Villigen, LBR

71B
Molecular and Cellular Biosciences
Biochemistry

Regulation of membrane scission in yeast endocytosis

Deepika, Menon
Deepikaa Menon (1), Marko Kaksonen (1)
(1) Department of Biochemistry, University of Geneva, Geneva

72
Molecular and Cellular Biosciences
Biochemistry

The interplay between the Spindle Assembly Checkpoint and Nuclear Pore Complex in ageing and stress

Mirkovic, Mihailo
Mihailo Mirkovic (1), Aliaksandr Damenikan (1), Yves Barral (1)*
(1) Institute of Biochemistry, ETH Zurich, Department of Biology

73
Molecular and Cellular Biosciences
Biophysics

ESCRT-III reshapes membrane vesicles into helical tubes

Barberi, Luca
Joachim Moser Von Filseck (1), Luca Barberi (1)*, Nathaniel Talledge (2)°, Isabel Johnson (2)°, Adam Frost (2)°, Martin Lenz (3)°, Aurélien Roux (1)*
(1) University of Geneva, Department of Biochemistry
(2) University of California San Francisco, Department of Biochemistry and Biophysics
(3) CNRS, University of Paris-Sud, University of Paris-Saclay, Laboratory of Theoretical Physics and Statistical Models

74
Molecular and Cellular Biosciences
Biochemistry

Quiz question: Are Mycobacteria the favourite snack of Dictyostelium?

The developmental cycle of Dictyostelium discoideum promotes curing of a mycobacterial infection by cell-autonomous mechanisms and exclusion of infected cells

Nitschke, Jahn
Jahn Nitschke (1)°, Ana Teresa López-Jiménez (1)°, Monica Hagedorn (2)°, Thierry Soldati (1)*
(1) University of Geneva, Biochemistry
(2) Jacobs University Bremen, Life Sciences and Chemistry

75
Molecular and Cellular Biosciences
Biochemistry

Quiz question: Name 2 different functions of mTOR apart from nutrient sensing.

Interaction between plasma membrane tension and mTOR complex 2: Lessons learned from drugging membranes.

Nowak, Paulina
Paulina Nowak (1), Margot Riggi (1), Vincent Mercier (2), Chloe Roffay (2), Aurelien Roux (2), Robbie Loewith (3)
(1) University of Geneva, Molecular Biology, Biochemistry
(2) University of Geneva, Biochemistry
(3) University of Geneva, Molecular Biology

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Molecular and Cellular Biosciences
Physiology

Quiz question: At what time is the light treatment administered to mice?

Light your way up to a better mood. Can light help us combat mood disorders?

Olejniczak, Iwona
Iwona Olejniczak (1), Jurgen Ripperger (1), Andrea Brenna (1), Urs Albrecht (1)*
(1) UNIFR, Biology

77
Molecular and Cellular Biosciences
Genetics

Transcriptional regulatory mechanisms in lipotoxicity-induced non-alcoholic steatohepatitis

Pérez-Schindler, Joaquín
Joaquín Pérez-Schindler (1)°, Elyzabeth Vargas-Fernández (1)°, Bettina Karrer-Cardel (1)°, Christoph Handschin (1)*
(1) University of Basel, Biozentrum

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Molecular and Cellular Biosciences
Bone regeneration

Quiz question: What is the role of Notch signalling in malignancies?

Methotrexate (MTX) chemotherapy alters Notch signalling in bone; Mechanism for MTX-induced bone loss

Peymanfar, Yaser
Yaser Peymanfar (1), Yu Wen Sue (1), Qian Tang (1), Mohammad Hossein Hassanshahi (1)°, Cory J. Xian (1)*
(1) University of South Australia, Cancer Research Institute

79
Molecular and Cellular Biosciences

Quiz question: Which two fluorescent super-resolution microscopy techniques are used in this study?

Mitochondrial RNA granules are liquid condensates positioned by membrane dynamics

Rey, Timo
Timo Rey (1), Sofia Zaganelli (2), Jean-Claude Martinou (2)*, Suliana Manley (1)
(1) EPFL, IPHYS
(2) UniGe, Dept. Cell Biology

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Molecular and Cellular Biosciences
Epigenetics

Quiz question: What epigenetic mark did we investigate?

Making the most of rodent's sperm: OmniSperm opens new horizons for epigenetic inheritance studies.

Roszkowski, Martin
Martin Roszkowski (1), Irina Lazar-Contes (1), Pierre-Luc Germain (1), Deepak Tanwar (1), Niharika Gaur (1), Francesca Manuella (1), Dalila Korkmaz (2), Mark Ormiston (2), Johannes Vom Berg (2), Jörg Tost (3), Johannes Bohacek (4)*, Isabelle Mansuy (1)*
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(2) University of Zurich, Institute of Laboratory Animal Science

(3) CEA Centre National de Recherche en Génomique Humaine, Institut de biologie François Jacob
(4) ETH Zurich, Institute for Neuroscience

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Molecular and Cellular Biosciences

SOX2 Acts as A "Super Pioneer Transcription Factor" by Inducing Replication-Dependent DNA Demethylation at its Binding Sites.

Vanzan, Ludovica
Ludovica Vanzan (1), Hadrien Soldati (1)°, Victor Ythier (1)°, Santosh Anand (1)°, Nicole Francis (2)°, Rabih Murr (1)*
(1) University of Geneva, Department of Genetic Medicine and Development
(2) Institut de Recherches Cliniques de Montréal

82
Molecular and Cellular Biosciences

THERAPEUTIC POTENTIAL OF HEPARANASE IHIBITORS IN SANFILIPPO SYNDROME

Veraldi, Noemi
Noemi Veraldi (1), Isabelle Dentand Quadri (2), Ariane de Agostini (2)
(1) HUG , Department of Clinical Pathology
(2) University of Geneva , Department of Pathology and Immunology

83
Molecular and Cellular Biosciences
Immunology

Quiz question: What is PP13?

A Pregnancy Specific Glycoprotein And Its Immune-Regulatory Potential In Human Gestation

Vokalova, Lenka
Lenka Vokalova (1)°, Shane Vontelin van Breda (1)°, Guenther Schäfer (1)°, Simona Rossi (1)*
(1) University Hospital, University of Basel, Basel, Switzerland, Department of Biomedicine

84
Molecular and Cellular Biosciences

A monoclonal antibody against bacterially expressed MPV17 sequences does not stain Mitochondria and lacks staining in Human Mpv17 knock out cells; in support of nucleotide bypass therapy for patients with Mpv17 deficiency disease

Weiher, Hans
Hans Weiher (1), Pidder Jansen-Dürr (2)
(1) Hochschule Bonn Rhein Sieg, Applied Natural Sciences
(2) Universität Innsbruck, Institut für biologische Alternsforschung

85
Molecular and Cellular Biosciences
Physiology

Quiz question: Why do I sleep-deprive my mice?

Contribution of the SCN neuronal and astrocytic clock to the sleep/wake cycle and sleep homeostasis

Wendrich, Katrin
Katrin Wendrich (1), Iwona Olejniczak (1), Urs Albrecht (1)*
(1) University of Fribourg, Department of Biology

86
Molecular and Cellular Biosciences
Cancer Biology

Quiz question: What is the name of the MK2 inhibitor?

Inhibition of p38/MK2 signaling prevents vascular invasion of melanoma

Wenzina, Judith
Judith Wenzina (1)*, Silvio Holzner (1), Emmi Puujalka (1), Phil Cheng (2), Agnes Forsthuber (1), Karin Neumüller (1), Klaudia Schossleitner (1), Beate Lichtenberger (1), Mitch Levesque (2), Peter Petzelbauer (1)
(1) Medical University of Vienna, Dermatology
(2) University of Zurich, Dermatology

87
Molecular and Cellular Biosciences

Functional characterization of the ubiquitin ligase Nedd4-1 in skin homeostasis and repair

Yan, Shen
Shen Yan (1), Sabine Werner (1)
(1) Institute of Molecular Health Sciences, D-BIOL

88
Molecular and Cellular Biosciences

Compartmentalization of mitochondria during asymmetric cell division

Yoshii, Saori
Saori Yoshii (1), Yves Barral (1)
(1) ETH Zurich, Institute of Biochemistry

89
Neuroscience
Molecular and Cellular Biosciences

Quiz question: What are the major carriers of circulating small RNAs? Which of the carriers pass blood-brain-barrier?

Investigations into the Role of Circulating RNAs in Epigenetic Inheritance of Post-Trauma Symptoms in Mammals

Alshanbayeva, Anar
Anar Alshanbayeva (1), Isabelle Mansuy (1)
(1) ETH Zurich and University of Zurich , D-HEST

90
Neuroscience
Single-cell RNA seq

Quiz question: How many cells are in the larval brain?

Single cell transcriptome atlas of the Drosophila larval brain

Brunet Avalos, Clarisse
Clarisse Brunet Avalos (1), Rémy Bruggmann (2), Simon Sprecher (1)*
(1) University of Fribourg, Biology
(2) University of Bern, Bioinformatics

91
Neuroscience
Stem Cells

Quiz question: How does pregnancy affect female brain plasticity ?

Spatial and temporal recruitment of adult neural stem cells during pregnancy

Chaker, Zayna
Zayna Chaker (1), Corina Segalada (1)°, Fiona Doetsch (1)*
(1) Biozentrum, University of Basel

92
abstract retracted

93
Neuroscience

Bank voles - a natural animal model of impulsive behavior

Amrein, Irmgard
Marielle Jörimann (1), Jovana Malikovic (1)°, Christopher Pryce (2)°, Toshihiro Endo (3)°, David P Wolfer (4)°, Irmgard Amrein (1)*, Seico Benner (5)°
(1) University of Zurich, Department of Anatomy
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(3) Phenovance Research&Technology LLC, Kashiwanoha, Japan
(4) ETH Zurich, D-HEST
(5) Hamamatsu University School of Medicine, Japan, Department of Psychiatry

94
Neuroscience
Computational Biology
marine biology

Quiz question: Why do we compare neuronal cell populations of a cnidarian with those of a xenacoelomorph ?

Nervous system evolution - Insights from sea anemones and marine worms

Kaltenrieder, Cyrielle
Cyrielle A. E. Kaltenrieder (1), Simon G. Sprecher (1)
(1) University of Fribourg, Biology

95
Neuroscience
Molecular and Cellular Biosciences
Developmental Biology

Quiz question: How are the polydactyl chick wings that I use in my project generated?

Towards a molecular understanding of digit-specific axon guidance in native and polydactyl limbs

Pumo, Gabriele
Gabriele Pumo (1), Maëva Luxey (1), Bianka Berki (1), Patrick Tschopp (1)*
(1) Universität Basel, DUW

96
Neuroscience

High packing density of neurons in the pigeon midbrain results from evolutionary changes in developmental pathways

Rodrigues, Tania
Tania Rodrigues (1), Linda Dib (2), Lidia Matter-Sadzinski (1), Jean-Marc Matter (1)*
(1) UNIGE, Biochemistry, Molecular Biology
(2) UNIL, SIB

97
Pharmacology
Biochemistry

Synthesis of Biologically Active New Bishomocyclohexitol Derives

Baran, Arif
Arif Baran (1)
(1) Arts And Sciences, Chemistry

98
Pharmacology
Cancer Biology
Neuroscience

Targeted Therapy for Neurological Disorders: A Novel, Orally Available and Brain-Penetrant mTOR Inhibitor (PQR626)

Borsari, Chiara
Chiara Borsari (1), Erhan Keles (1)°, Denise Rageot (1)°, Thomas Bohnacker (1)°, Anna Melone (1)°, Lucinda Kate Batchelor (1)°, Martina De Pascale (1)°, Paul Hebeisen (2)°, Petra Hillmann (2)°, Doriano Fabbro (2)°, Matthias Wymann (1)*
(1) University of Basel, Department of Biomedicine
(2) PIQUR Therapeutics AG

99
Pharmacology
cancer immunology

Glycan-Checkpoint Inhibitor unleashing CD8+ T cells against Cancer

Haas, Quentin
Quentin Haas (1), Kayluz Boligan (1), Camilla Jandus (2), Christoph Schneider (1), Cedric Simillion (3), Michal Stanczak (4), Monika Haubitz (5), Morteza Jafari (6), Alfred Zippelius (4), Gabriela Baerlocher (5), Heinz Läubli (7), Robert Hunger (6), Pedro Romero (2), Hans-Uwe Simon (8), Stephan von Gunten (8)*
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(2) department of oncology, university of Lausanne
(3) department of BioMedical research, university of Bern
(4) cancer immunology laboratory, university of Basel
(5) experimental hematology, department of Biomedical research, university of Bern
(6) department of dermatology, bern university hospital, bern
(7) Department of Biomedecin, university of Basel
(8) institute of pharmacology, university of Bern

100
Pharmacology, Immunology

The effect of glucocorticoids on eosinophils

Verschoor, Daniëlle
Daniëlle Verschoor (1), Stefanie Graeter Graeter (1), Stephan von Gunten (1)*
(1) University of Bern, Institute of Pharmacology

101
Physiology
Genetics
Endocrinology

Quiz question: Which organ does produce most amidated hormones?

Peptide amidation in physiology and disease

Araldi, Elisa
Elisa Araldi (1), Umesh Ghoshdatsidier (1), Markus Stoffel (1)*
(1) ETH Zurich, IMHS

102
Physiology

Store-Operated Calcium Entry: what is its role during excitation-contraction coupling over time of myotube maturation?

Brunetti, Jessica
Jessica Brunetti (1), Stéphane König (2), Maud Frieden (3)*
(1) University of Geneva, Department of Cell Physiology and Metabolism and Department of Basic Neurosciences
(2) University of Geneva, Department of Basic Neurosciences
(3) University of Geneva, Department of Cell Physiology and Metabolism

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Physiology
Cancer Biology
Molecular & Cellular Biosciences

Quiz question: Which inhibitor would you choose to inhibit the activation of c-kit receptor through its immobilized Ligand ?

Therapeutic resistance in leukaemia: implication of the tyrosine kinase c-kit and integrin crosstalk

Chebbi, Seimia
Seimia Chebbi-Mathlouthi (1), Bernhard Wehrle-Haller (1)*
(1) University of Geneva , Department of Cell Physiology and Metabolism

103B
Physiology
Membrane contact sites

Regulation of calcium fluxes at endoplasmic reticulum - plasma membrane contact sites

Henry, Christopher
Christopher Henry (1), Nicolas Demaurex (1)*
(1) University of Geneva, Cellular Physiology and Metabolism

104
Physiology
Molecular and Cellular Biosciences
Metabolism

miR-149 in Non-Alcoholic Fatty Liver Disease

Sousa, Marta
Marta Correia de Sousa (1), Monika Gjorgjieva (1), Michelangelo Foti (1)*
(1) Faculty of Medicine, University of Geneva, Cell Physiology and Metabolism

105
Physiology

The function of arginase-II in regulation of macrophage inflammation in aging

Huang, Ji
Ji Huang (1), Sara-Jessica Camerin (1), Xiu-Fen Ming (1), Zhihong Yang (1)*
(1) Cardiovascular and Aging Research, Department of Endocrinology, Metabolism, and Cardiovascular System, Faculty of Science and Medicine, University of Fribourg

106
Physiology
Computational Biology

Expression of Androglobin in the female reproductive tract

Osterhof, Carina
Carina Osterhof (1)°, Stefan Mündnich (1), Michel Seiwert (1), David Hoogewijs (2), Thomas Hankeln (1)*
(1) University of Mainz, Germany, Institute for Organismic and Molecular Evolutionary Biology
(2) University of Fribourg, Switzerland, Departement of Medecine, Faculty of Science

107
Physiology
Cardiovascular Biology

Activation of endogenous protein phosphatase 1 enhances the calcium sensitivity of the ryanodine receptor type 2 in murine ventricular cardiomyocytes

Potenza, Duilio Michele
Duilio Michele Potenza (1), Radoslav Janicek (2), Miguel Fernandez - Tenorio (2), Ernst Niggli (2)
(1) University of Fribourg, Department of Medicin
(2) University of Bern, Department of Physiology

108
Physiology
Anatomy

Quiz question: What is the primo vascular system?

Indications for an additional vascular system in mammals (distinct from the lymph and blood vascular system): Microscopic analysis of primo vessels and primo nodes from the intestine surface of rats

Scholkmann, Felix
Felix Scholkmann (1), Yiming Shen (2)°, Pan-Dong Ryu (2)*
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(2) Seoul National University, Seoul, South Korea, Department of Veterinary Pharmacology, College of Veterinary Medicine and Research Institute for Veterinary Science

109
Physiology
Proteomics
Metabolic diseases

Diet-induced loss of adipose Hexokinase 2 triggers hyperglycemia

Shimobayashi, Mitsugu
Mitsugu Shimobayashi (1), Sunil Shetty (1)°, Irina C. Frei (1)°, Bettina K. Wölnerhanssen (2)°, Diana Weissenberger (1)°, Nikolaus Dietz (1)°, Amandine Thomas (1)°, Danilo Ritz (1)°, Anne Christin Meyer-Gerspach (2)°, Timm Maier (1)°, Nissim Hay (3)°, Ralph Peterli (4)°, Nicolas Rohner (5)°, Michael N. Hall (1)°*
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(2) St. Claraspital, St. Clara Research Ltd, St
(3) College of Medicine, University of Illinois at Chicago, 4Department of Biochemistry and Molecular Genetics
(4) University Centre for Gastrointestinal and Liver Diseases,

Clarunis, Department of Visceral Surgery
(5) Stowers Institute for Medical Research

110
Physiology

Determination of the quiescence and activation mechanisms of human primary muscle reserve cells

Tollance, Axel
Axel Tollance (1), Stéphane König (1), Maud Frieden (1)*
(1) University of Geneva, Department of Cell Physiology and Metabolism

111
Physiology

Quiz question: List all the proteins that interact with UNC93B1

UNC93B1: An ER chaperone modulator of STIM1 activity

Wang, Wen-An
Wen-An Wang (1), Nicolas Demaurex (1)*
(1) University of Geneva, Physiology and Cell Metabolism

112
Plant Sciences

Quiz question: How does the sequence of the AN2 gene differ in the white and purple Petunia species?

Back to purple: Restoration of floral color in Petunia and its impact on pollinator behavior

Lüthi, Martina
Martina N. Lüthi (1)°, Andrea E. Berardi (1)°, Cris Kuhlemeier (1)*
(1) University of Bern, Institute of Plant Sciences

113
Proteomics

Quiz question: What kind of proteins do we expect to find in the trophallactic fluid of ant species that do trophallaxis?

Diffusion, content and evolution of socially exchanged fluids in ant colonies

Meurville, Marie-Pierre
Marie-Pierre Meurville (1)
(1) UNIFR, Biology

114
Proteomics
Systems Biology

Quiz question: How many peptide identifications are reported in neXtProt?

neXtProt tools for the identification and validation of human proteins by mass spectrometry

Lane, Lydie
Pierre-André Michel (1)°, Alain Gateau (1)°, Mathieu Schaeffer (2)°, Frédéric Nikitin (1)°, Estelle Audot (1)°, Valentine Rech de Laval (1)°, Kasun Samarasinghe (2)°, Paula Duek (1)°, Amos Bairoch (2)°, Monique Zahn-Zabal (1)°, Lydie Lane (2)*
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(2) University of Geneva, Department of Microbiology and molecular medicine

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Proteomics
Bioinformatics

FGCZ-GSEA-ORA: a Tool for Pathway Analysis in Proteomics

Nanni, Paolo
Paolo Nanni (1)°, Witold Wolski (1)°, Christian Panse (1), Claudia Fortes (1), Laura Kunz (1), Ralph Schlapbach (1)
(1) University / ETH Zurich, Functional Genomics Center Zurich

116
Proteomics
Microbiology
Proteogenomics

Quiz question: Why are small Proteins (<100 aa) underrepresented in current genome annotations?

From *de novo* genome assembly to multispecies proteogenomic based identification of novel sProteins.

Schori, Christian
Christian Schori (1), Hannes Petruschke (2), Adithi R. Varadarajan (1), Nico Jehmlich (2), Martin von Bergen (2), Christian H. Ahrens (1)*
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(2) Helmholtz-Centre for Environmental Research - UFZ, Leipzig, Germany, Department of Molecular Systems Biology

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Proteomics
Computational Biology
Microbiology, Infectious Diseases

An integrated model system to study biofilm-associated adaptation to antimicrobials and resistance evolution in Pseudomonas aeruginosa MPAO1

Ahrens, Christian
Adithi R Varadarajan (1), Ray N Allan (2), Jules Valentin (3), Olga E Castaneda-Ocampo (4), Vincent Somerville (1), Franziska Pietsch (5), Paul Skipp (6), Henny C van der Mei (4), Qun Ren (3), Frank Schreiber (5), Jeremy S Webb (6), Christian H Ahrens (1)*
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(2) National Biofilms Innovation Centre, University of Southampton & School of Pharmacy, De Montfort University
(3) Empa Swiss Federal Labs for Materials Science & Technology
(4) University of Groningen & University Medical Center Groningen
(5) Federal Institute for Materials Research and Testing (BAM), Berlin
(6) National Biofilms Innovation Centre, University of Southampton

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Proteomics

Integrative profiling of apoptotic proteolysis using SEC-SWATH/DIA complex-centric proteomics and TAILS terminomics

Vizovisek, Matej
Matej Vizovisek (1), Fabian Frommelt (1), Fabio Sabino (2), Claudia Martelli (1), Andrea Fossati (1), Federico Uliana (1), Ulrich Auf Dem Keller (2), Ruedi Aebersold (1)*

(1) ETH Zürich, Department of Biology, Institute of Molecular Systems Biology
(2) Technical University of Denmark, Department of Biotechnology and Biomedicine

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Stem Cells
Molecular and Cellular Biosciences
Regenerative medicine

Comprehensive Mass Cytometry Analysis of Human Adipose Derived Stem Cells for Clinical Applications

Canepa, Daisy
Daisy D. Canepa (1)°, Eirini Arvaniti (2)°, Vinko Tosevski (3)°, Sonja Märsmann (1)°, Benjamin Eggerschwiler (1)°, Manfred Claassen (2)°, Hans-Christoph Pape (1)°, Elisa A. Casanova (1)*, Paolo Cinelli (1)*
(1) University Hospital Zurich, Department of Trauma
(2) ETH Zurich, Institute of Molecular Systems Biology
(3) Mass Cytometry Facility Zurich, Mass Cytometry Facility Zurich

120
Stem Cells
Neuroscience

Quiz question: Which markers do neural crest stem cells express?

Defining the transcriptional network that governs peripheral glia specification by using human pluripotent stem cells

Ramos Calçada, Raquel Maria
Raquel R. Calçada (1), Sandra Varum (1), Elisa Marzorati (1), Lukas Sommer (1)*
(1) University of Zürich, Institute of Anatomy, Stem Cell Biology

121
Structural Biology

Quiz question: What happens to the trypanosomes when I induce Centrin4 RNAi?

On the Tracks of the TAC: Cryo Electron Tomography of the Basal Body kDNA Region in Trypanosoma brucei

Bregy, Irina
Irina Bregy (1), Benoît Zuber (2)*, Torsten Ochsenreiter (3)*
(1) University of Bern, Institute of Cell Biology / Institute of Anatomy
(2) University of Bern, Institute of Anatomy
(3) University of Bern, Institute of Cell Biology

122
Structural Biology
Biochemistry

Quiz question: How are proteins targeted to peroxisomes in eukaryotic cells?

Non-canonical PTS1 binding in the Yeast Pex5p - Pcs60p peroxisomal import complex

Buergi, Jerome
Jérôme Bürgi (1), Evdokia-Anastasia Giannopoulou (2), Pascal Lill (3), Ralf Erdmann (4), Christos Gatsogiannis (5), Matthias Wilmanns (1)*
(1) European Molecular Biology Laboratory, Hamburg
(2) High Energy Accelerator Research Organization (KEK), Structural Biology Research Center
(3) Max Planck Institute of Molecular Physiology, Structural Biochemistry
(4) Ruhr Universität Bochum, Biochemie und Pathobiochemie/Systembiochemie

(5) Max Planck Institute of Molecular Physiology, Structural biochemistry

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Structural Biology
Biochemistry

Quiz question: Which amino acid is necessary for catalytic activity of monoacylglycerol lipase?

Specific Inhibition of Mycobacterial Monoacylglycerol Lipase

Grininger, Christoph
Christoph Grininger (1), Philipp Aschauer (1)°, Monika Oberer (1)*
(1) University of Graz, Institute of Molecular Biosciences

124
Structural Biology
Pharmacology

Quiz question: How can the native quaternary structure of SAA1 be derived from the new crystal structure?

The Structures of Human Serum Amyloid 1 – why can't you just be normal?

Hofer, Gerhard
Gerhard Hofer (1), Ursula Smole (2)°
(1) University of Graz, Institute of Molecular Biosciences
(2) University of Vienna, Institute of Immunology

125
Structural Biology
Biophysics
Proteomics

Integrating protein-RNA cross-linking into hybrid structural biology projects

Leitner, Alexander
Alexander Leitner (1)*, Chris P. Sarnowski (1)°, Michael Götze (1)°, Ruedi Aebersold (1)°, Tebbe de Vries (2)°, Frédéric H.-t. Allain (2)°, Anna Knörlein (3), Jonathan Hall (3)
(1) ETH Zurich, Department of Biology, Institute of Molecular Systems Biology
(2) ETH Zurich, Department of Biology, Institute of Molecular Biology and Biophysics
(3) ETH Zurich, Department of Chemistry and Applied Biosciences, Institute of Pharmaceutical Sciences

125B
Structural Biology
Microbiology

Conformation of cellobiose dehydrogenase determined at different ambient conditions by small angle X-ray scattering (SAXS)

Motycka, Bettina
Bettina Motycka (1,2), Daniel Kracher (1), Roland Ludwig (1), Rupert Tscheließnig (2)
(1) Biocatalysis and Biosensing Laboratory, Department of Food Science and Technology, BOKU-University of Natural Resources and Life Sciences, Muthgasse 18. 1190 Vienna, Austria.
(2) Department of Biotechnology, BOKU-University of Natural Resources and Life Sciences, Muthgasse 18. 1190 Vienna, Austria.

126
Structural Biology
Molecular and Cellular Biosciences
Pharmacology

Quiz question: What is the difference between natural and recombinant Ole e 1?

The crystal structure of the major olive tree pollen allergen Ole e 1

Wortmann, Judith
Judith Wortmann (1), Gerhard Hofer (1)°, Philipp Aschauer (1)°, Tea Pavkov-Keller (1)°, Walter Keller (1)*
(1) University of Graz, Institute of Molecular Biosciences

127
Systems Biology
Molecular and Cellular Biosciences

Mapping Type 1 Diabetes Progression by Imaging Mass Cytometry

Damond, Nicolas
Nicolas Damond (1), Engler Stefanie (1), Vito Zanotelli (1), Clive Wasserfall (2), Irina Kusmartseva (2), Fabrizio Thorel (3), Harry Nick (4), Pedro Herrera (3), Mark Atkinson (2), Bernd Bodenmiller (1)*
(1) University of Zurich, Department of Quantitative Biomedicine
(2) College of Medicine, University of Florida, Department of Pathology, Immunology, and Laboratory Medicine
(3) University of Geneva, Department of Genetic Medicine and Development
(4) College of Medicine, University of Florida, Department of Neuroscience

128
Systems Biology, Neuroscience
single-cell genomics

Quiz question: Do radial-glia cells maintain their patterning signature over time?

A comprehensive map of mammalian nervous system development from gastrulation to birth

La Manno, Gioele
Gioele La Manno (1)*, Kimberly Siletti (2), Alessandro Furlan (3), Sten Linnarsson (2)*
(1) EPFL, BMI
(2) Karolinska Institutet, MBB
(3) Cold Spring Harbour Laboratories

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Systems Biology
Proteomics
Chromatin & Transcription

Quiz question: What is ChromID and can it be used for?

ChromID reveals the proteome composition of key chromatin states in murine stem cells

Villaseñor, Rodrigo
Rodrigo Villaseñor (1), Ramon Pfaendler (1)°, Christina Ambrosi (1)°, Stefan Butz (1)°, Sara Giuliani (1)°, Elana Bryan (2)°, Thomas Sheahan (2)°, Annika Gable (1)°, Nina Schmolka (1)°, Massimiliano Manzo (1)°, Joël Wirz (1)°, Christian Feller (3)°, Christian von Mering (1)°, Ruedi Aebersold (3)°, Philipp Voigt (2)°, Tuncay Baubec (1)*
(1) University of Zurich
(2) University of Edinburgh
(3) ETH Zurich

130
Systems Biology, Biophysics

Quiz question: How does the Michaelis-Menten constat change considering physiological volume exclusion?

PARTICLE-BASED SIMULATION REVEALS MACROMOLECULAR CROWDING EFFECTS ON THE MICHAELIS-MENTEN PARAMETERS

Weilandt, Daniel Robert
Daniel Robert Weilandt (1), Vassily Hatzimanikatis (1)*
(1) EPFL, Laboratory of Computational Systems Biotechnology

131-135 POSTERS FROM PHD PROGRAMS AND ACADEMIC ASSOCIATIONS

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Madur, Lorraine
Pint of Science

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Ambrosi, Christina
Open Innovation in Life Sciences

133
Georgi, Fanny
Association of Junior Academics at the University of Zurich (VAUZ)

134
Toepel, Ulrike
Lemanic Neuroscience Program

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Dentan, Corinne
CUSO StarOmics

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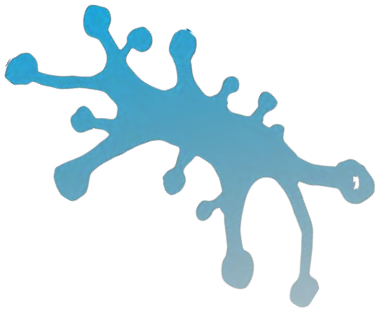

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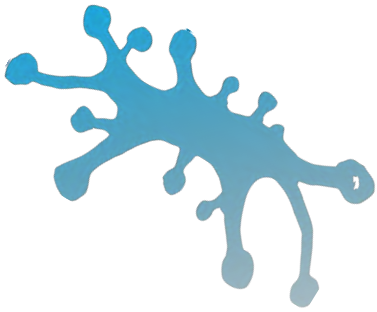

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Ethical aspects of patenting

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Jyoti Choudhary
The Institute of Cancer Research, UK

Lennart Martens
VIB-UGent Center for Medical Biotechnology, BE

More information at meetings.ls2.ch/proteomics-2020

Please register before February 23th, 2020

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Design by Dagmar Rozakova

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1st Swiss Symposium on Innovation in Undergraduate Teaching of Life Sciences

Organised by:
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Dr. Laurent Mène-Saffrané (University of Fribourg)

Topics might include:
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Info & Registration: www.meetings.ls2.ch/undergraduate-teaching

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Cardiovascular Research Meeting 2020

3rd meeting as LS² intersection Cardiovascular Biology

12-13 March 2020
University of Fribourg
Site Miséricorde, Avenue de l'Europe 20, CH-1700 Fribourg

KEYNOTE SPEAKERS

Sanjay Sinha (University of Cambridge, UK)
Stephan Rohr (University of Bern, CH)
Katja Odening (University of Bern, CH)
Hester Den Ruijter (University of Utrecht, NL)
Catherine Gebhard (University of Zurich, CH)
Sokrates Stein (University of Zurich, CH)
Priscilla Briquez (University of Chicago, US)
Michael Vanlandewijck (University of Uppsala, SE)
Nathalie Gaborit (University of Nantes, FR)

...plus many talks from abstracts, posters, prizes to the best presentations & meeting dinner!

Abstract deadline: 30.01.2020
Registration deadline: 28.02.2020

Free for LS² student members (Registration required)

www.meetings.ls2.ch/cardiovascular2020

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